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ABSTRACT

This paper describes the national, state, and local contexts in which California (CA) is implementing School-to-Career (STC). Section I presents an historical view of School-to-Work (STW), describing national goals of the STW Opportunities Act 1994 (STWOA), and also discusses CA's STC efforts. Section II provides contextual information about STW implementation nationwide. It presents findings of three national studies and describes institutional participants, career awareness activities, efforts to promote access for all students, implementation of career majors, curriculum integration, and work- based learning. Section III focuses on CA, describing goals and strategies that local partnerships (LPs) are using as they implement STC. It describes how LPs are working to reach goals set by STWOA and to build their STC initiatives, giving illustrative examples of efforts related to school- and work-based learning, connecting activities, and providing access. These early quantitative findings from the LP Survey are presented: partnership participants; career awareness and development; student access; career majors; curriculum integration; and work-based learning. It addresses LPs' efforts to build a sustainable STC system. Section IV highlights implications for the Phase II Evaluation. Section V provides a comprehensive plan for evaluating CA's STC system. It describes guiding principles, major components and core data elements, and the reporting of results. Appendixes include 47 references and analyses. (YLB)

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White Paper

California School-to-Career Statewide Evaluation

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Purpose of White Paper

Under the provisions of the School-to-Work Opportunities Act of 1994 (STWOA), the state of California contracted with WestEd and MPR Associates to conduct a statewide evaluation of its School-to-Career (STC) system. Findings from the evaluation will be used to support further development of this system and serve as a key information source for the many federal, state, and local stakeholders who are working to improve our education system. The overarching research questions to be addressed by the statewide evaluation study are:

- What is the status of STC implementation in California?
- How has STC affected student preparation for post-secondary education and career entry?
- To what degree and in what ways has STC contributed to systemic change?
- Have STC principles penetrated the community deeply enough to be sustainable?

The main goal of this White Paper is to lay the foundation for the evaluation to be conducted from Fall 2000 through June 2002. Using a variety of sources—including Local Partnership (LP) applications for STWOA funds, LPs' Quarterly Reports, data from two federally-sponsored longitudinal evaluations of STWOA implementation, and existing evaluations conducted for LPs—WestEd and MPR have examined the status of STC in California. This Paper discusses these findings and emphasizes how they relate to designing a feasible evaluation strategy.

The Evolution of School-to-Career in California

An historical overview of STC helps to frame current efforts in California as the state works to create and sustain its STC system. Since the landmark Smith-Hughes Act of 1917 that supported vocational education programs aimed at helping low-performing students prepare for occupations, efforts related to preparing students for the workforce have changed dramatically at the national and state levels. In the 1990s, the goals of vocational education programs began to change and a new STW model emerged. In contrast to federally funded vocational education programs supported by the Smith-Hughes Act, current STW programs are designed to develop academic and work-based skills for all students. While there are many different approaches to STW, all have at their core the goal of improving academic achievement while at the same time providing students with marketable, work-based skills.

Major Legislation and National Reform Initiatives Supporting STW

Recent federal legislation has had a significant impact on California's STC implementation. For example, the Carl D. Perkins Vocational and Applied Technology Education Act of 1990 (Perkins II) helped create the new vision that ultimately became the STW model by promoting "reform, innovation, and continuous improvement in vocational and technical education" (Summary of Public Law 105-332). One particularly noteworthy aspect of the Perkins II legislation is set-aside funding under Title III (E) for special Tech Prep grants for high schools to work with two-year colleges or apprenticeship programs to create a coherent sequence of study for students that combines academic and vocational courses. Perkins III, which was authorized in 1998, further extends the new vision by promoting the development of integrated, "one-stop" education and workforce development systems at the state and local levels and placing more emphasis on assessment and accountability for student achievement relative to rigorous academic and industry standards.

The legislation with most direct influence over California's STC system is the STWOA, whose chief purpose is underwriting the initial costs of establishing statewide STW systems in all states. Although certain core elements are expected (e.g., integrating school-based and work-based learning; connecting activities; career majors; linkages between secondary and post-secondary education), states are allowed considerable leeway in designing their STW systems. The STWOA also specifies that state STW systems should be integrated with systems developed under Goals 2000: Educate America Act and the National Skill Standards Act of 1994 in order to serve as a comprehensive educational reform strategy.

The U.S. Department of Education also initiated related programs aimed specifically at high schools, such as the Comprehensive School Reform Demonstration and the New American High Schools. Like Perkins III and STWOA, these reforms include integration of academic and vocational curricula and the establishment of partnerships with employers. Moreover, influential high school reform networks, such as the Coalition of Essential Schools and the "High Schools that Work" project (established by the Southern Regional Education Board), support many of the principles underlying the STW movement.

The School-to-Career Initiative in California

Various initiatives currently exist in California that were created to provide individuals with career awareness and employment-related skills. Some programs were specifically designed as opportunities for job training, such as those funded by the Job Training Partnership Act (JTPA), which provides services for economically disadvantaged adults and youth, dislocated workers, and others who face substantial employment barriers. Others have broader aims and emphasize the integration of school- and work-based learning, and promote curriculum integration, K-16 articulation, and the involvement of employers, labor organizations, schools, parents, students, and other key stakeholders. Interestingly, many of these key programs, including California Partnership Academies, Tech Prep, and Regional Occupational Center and Programs (ROC/Ps), preceded California's successful application for STWOA funds in 1996.

California began planning in 1993 for implementation of its STC system, and received its first STWOA implementation grant in 1996. Over a five-year period, California can receive up to $131.4 million to serve as venture capital to develop its STC system.

The STC plan for California was created with the assistance of multiple stakeholders, including a 27-member task force appointed by the governor and representatives from the California Department of Education, the Chancellor's Office of the California Community Colleges, and the Employment Development Department. The cornerstone of California's STC plan is the funding and/or support of 59 LPs around the state. STWOA defines a LP as "a local entity that is responsible for local School-to-Work Opportunities programs" (Section 4(1) of STWOA). LPs are required to include employers; representatives of local educational agencies, post-secondary institutions, and organized labor; local educators; and students. To further support STC, California is undertaking other initiatives, including: development of an STC Curriculum Framework; establishment of a statewide assessment system to help ensure that students have the requisite academic foundation and incorporation of career-related assessments for high school students (Assessments for Career Education) into the statewide student assessment system; creation of the Golden Seal Merit Diploma, which will be awarded in part on the basis of excellence in core academic subjects and participation in work-based learning; and coordination with the state's One-Stop Career Centers.

In summary, California has received from the federal government and disseminated among LPs a substantial amount of seed money to implement a statewide STC system. However, much of the work related to career preparation in California predates the STWOA (California Partnership Academies, Tech Prep, ROC/Ps) or is funded by other concurrent funding streams (One-Stop Career Center System). One of California's major STC strategies, as stated in its STC implementation plan, is to effectively build on the existing efforts to create a comprehensive and efficient STC system.

The National Context for Examining STC in California

To assess California's STC effort, it is important to place the state's accomplishments in a national context. Understanding how the STW system has developed across the country since 1994 will ultimately allow for a comparison between California's system and national results.

Funded by the National STW Office, three major studies—the National Evaluation of STW Implementation, the STW Progress Measures, and STW in the 1990s: A Look at Programs and Practices in American High Schools—have collected and reported information on how students, schools, districts, employers, and communities are responding to the call for more comprehensive, coordinated school reform that links schooling to the world of work. Summarized below are the key findings from these three national studies with respect to key aspects of STW activities across the nation.

Governance/Institutional Participants

STW is an enterprise typically led by educational institutions in most states. Of the 37 funded states, 22 chose to locate the state STW office in the department of education. At the local level, school districts and high schools typically lead the STW effort, with the following levels of collaboration with other key groups: employers (most extensively), post-secondary institutions (less extensively), and organized labor (least extensively).

Career Development

The national evaluations indicate that most states and LPs emphasize broad career development over other components of STW implementation (National Evaluation, p. xv). Other key observations about career development activities across the nation include the following:

- In 1998, about four out of five seniors participated in interest inventories, employer talks at schools, and/or work-readiness classes, and two out of three participated in a job shadow or work site tour at some point during high school (Ibid., p. 62).
- In 1997, about half of elementary schools in STW partnerships reported offering significant career information within the curriculum. One year later, this increased to about two-thirds of elementary schools (Progress Measures, p. 10).
- In 1998, 68% of middle/junior high schools in reporting partnerships provided structured exploration activities, such as individualized learning plans linked to career pathways offered in high school. This compares with 59% in 1997 (Ibid., p. 11).[1]

Promoting Student Access

The National Evaluation found that STW partnerships have been relatively successful at promoting STW for all students, although participation rates among subgroups of students vary to some extent. Some of the findings of the National Evaluation's eight in-depth study states, include:

- The activities promoted in the STWOA are engaging students at all academic performance levels. However, students in the bottom quartile of their class are slightly less likely than their peers to participate in career-related academics (9.5% versus about 13% for the higher quartiles).
- Students who completed a college preparatory curriculum are just as likely as students who had not completed such a curriculum to participate in comprehensive career development, workplace activities linked to school, and career-related academics.
- Students who enrolled in a four-year college are slightly less likely than their peers who either did not enroll in college or enrolled in a two-year institution to participate in a workplace activity linked to school, but are very similar to their peers with respect to comprehensive career development and career-related academics.

[1] Data Source: U.S. Department of Labor, Bureau of Labor Studies, National Longitudinal Survey of Youth, 1996-97, Survey of School Administrators; U.S. Department of Education, National Center for Education Statistics, Common Core of Data Survey, 1993-94.

Work-Based Learning

Work-based learning takes many forms in U.S. high schools and funded STW partnerships, ranging from one-time visits to work sites—with very little connection to what students are learning in school—to paid youth apprenticeships that are the culmination of a coherent sequence of coursework. Not surprisingly, the more intensive types of work-based learning opportunities are the least common. While many high schools offer work-based learning opportunities, information from the Progress Measures Surveys suggest that only small percentages of students take advantage of these opportunities. Another important finding is that paid or unpaid positions obtained through school provide students with greater learning opportunities (National Evaluation, p. 89-90). Unfortunately, these opportunities are relatively rare. Only about one quarter of paid or unpaid positions that students held were obtained through school in 1998 (National Evaluation, p. 86).

Summary of National Context

The three national studies of STW show considerable progress in only a few years toward implementing key elements of the STWOA. However, many schools are providing only some parts of the STW school-improvement strategy, and few students participate in a comprehensive career-focused high school learning experience. The National Evaluation indicates that schools have a long way to go to integrate comprehensive career development activities, career-related academics, and paid or unpaid work experience that is linked to learning in the classroom, with only about 3% of students having been involved in all three of these curriculum approaches. Moreover, although the goals of the STW movement are to support high academic standards and produce positive student outcomes, it is too early to identify the role that STW is playing in achieving these goals (National Evaluation, p. 139). In most states, implementing STW and raising standards and accountability are two important school improvement efforts that have been operating independently of each other.

Efforts to Create a School-to-Career System in California

Whereas the previous section focuses on the national context for STW, this section focuses attention squarely on California and the work of the LPs. Analyses of LPs' Performance Matrices, quarterly reports, and evaluation reports show that California gave LPs a considerable

amount of latitude in designing STC activities and strategies. Although it is difficult to draw inferences about activity levels within or across partnerships or discuss progress toward reaching specific goals based on these documents, these data provide a rich, qualitative description of LPs' efforts related to four areas of STC: school-based learning, connecting activities, work-based learning, and access for all students.

School-Based Activities

Data suggest that LPs are using a wide variety of school-based activities and strategies, including:

- offering career exploration and college awareness, which typically begin in the elementary grades and continue through high school;
- offering career counseling and guidance on career choice and opportunity rather than focusing almost exclusively on class scheduling;
- raising student performance and academic standards by the elimination of "general education track courses" or by creating more stringent graduation requirements;
- developing or revising curricula based on labor market information and employer input;
- teaching employability skills in the classroom, including SCANS-based skills that were developed with a board of business and industry representatives;
- teaching technical skills in the classroom, through the incorporation of industry-recognized technical standards into the curricula; and
- informing students, employers, and teachers about legal and safety requirements for the work environment.

Connecting Activities

As was the case with school-based learning, LPs used a variety of connecting activities, including:

- creating direct links between employers and teachers by hiring a teacher-employer liaison or offering teachers opportunities to spend time in the workplace (teacher internships/externships); and
- offering business leaders the opportunity to work directly in schools through programs such as "Principal for a Day" or by helping with curriculum development.

Work-Based Learning

One of the key provisions of the STWOA that sets it apart from other school improvement efforts is the emphasis on work-based learning opportunities. Work-based learning opportunities include: work experience opportunities; job training and work experience coordinated with learning in school-based programs that are relevant to students' career major choices and lead to the award of skill certificates; instruction and activities in general workplace competencies; and broad instruction in all aspects of the industry (School-to-Work Glossary of Terms, 1996). LPs often connect work-based learning opportunities to other local programs such as Tech Prep and ROC/P. Overall, qualitative data indicate that LPs are using a variety of approaches to helping students learn about the real-life demands of the workplace, including internships, job shadowing, and community service. To facilitate participation and support among employers, labor organizations, public and private agencies, teachers, counselors, and other staff members, LPs are:

- providing professional development for stakeholders;
- hiring personnel to serve as liaisons between employers and schools; and
- supporting the collaboration of different stakeholders as they create curricula.

Access for All Students

In their efforts to provide access to STC for all students, LPs commonly built on programs that already target specific groups that serve a diverse group of students. Quarterly reports indicate that a number of LPs have coordinated efforts with programs such as Tech Prep and Jobs for Youth to recruit community partners and find placements for work-based learning opportunities.

Summary of Early Quantitative Findings

Major findings from the LP Survey in 1998 provide some quantitative data concerning LPs' organizational structure and implementation activities. This survey had an 82% response rate. Survey data provide a picture of STC during the early stages of California's implementation of

STWOA, and allow some comparisons to data at the national level. Major findings from the LP survey are summarized below.

- Almost one-half (47.8%) of LPs are led by education institutions, but data suggest that almost one-third (30.4%) are led by more than one type of organization, indicating a high level of collaboration between different groups within the LPs.
- There is a fairly even distribution of high schools, middle schools, and elementary schools in LPs, and every responding LP included at least one post-secondary institution.
- Private sector firms have a much higher level of participation in LPs than trade organizations, labor unions, or Chambers of Commerce.
- With regard to career awareness and development, career inventories, individual career counseling, and activities integrated into academic and vocational classes were the most frequently reported STC components at the high school level. These activities were also offered by approximately one-third of post-secondary institutions.
- LPs are promoting access to all students by using a variety of strategies, including: requiring that representatives of targeted groups (e.g., English Language Learners; students with disabilities) serve on their governing boards; offering funds for special activities related to the needs of these groups; training individuals from the business community; and using targeted promotional materials and special career guidance.
- LPs are using a variety of strategies to focus high school students on career majors. The most common approach to career majors in California involves providing students with written course sequences to help them make course selections.
- There is not a standard concept of curriculum integration across LPs. A little over one-half of LPs respondents (56%) developed career-related units or projects and even fewer (25% to 33%) used strategies such as academic-vocational team teaching or the use of state-developed applied curriculum materials.
- Collaboration between secondary and post-secondary institutions most commonly involves sharing employer networks and contacts (48.9%) or sharing labor market information (48.6%). Moreover, close to half of California high schools allow students dual enrollment in high school and college.
- With regard to work-based learning, the most prevalent activities in high schools in California partnerships include work site visits and job shadowing (about 43%). High intensity activities such as workplace mentoring and unpaid internships are offered far less frequently (in approximately 10% and 32% of high schools, respectively).

Summary of Local Partnership Sustainability Efforts

In quarterly reports to the state, LPs described a variety of strategies for sustaining STC efforts. These strategies include:

- recruiting representatives from key stakeholder groups (including local businesses, community-based organizations, post-secondary institutions, and parents), and creating systems for communication and collaboration;
- securing ongoing resources and long-time commitments from local employers, particularly work-based opportunities, as well as finding alternative funding sources;
- linking to community-based organizations such as Chambers of Commerce, County Education Offices, Private Industry Councils, and Workforce Development Councils to share information about their services and discuss ways the organizations can work with LPs;
- providing professional development for stakeholders about the goals and strategies of STC, appropriate curriculum and instructional techniques, and administrative aspects of STC management such as grant writing; and
- aligning efforts with other career-related programs, such as ROP/C, Tech Prep, and JTPA.

Implications of Findings for the Evaluation

As demonstrated above, we now have large amounts of data about STC in California. However, they are based on few common measures or reporting formats; are primarily qualitative; and focus on processes/plans implemented by LPs rather than student outcomes. Given that LPs are, for the most part, building systems and programs, collecting these data is appropriate. However, at present, data about STC in California do not provide information that is of the highest interest to funders and the Legislature (i.e., student performance data). Nor do they allow us to directly answer key research questions. Other findings about existing data on California's STC efforts to date include:

- The diversity of STC implementation in California suggests that both attitudinal and performance measures are needed to measure the full impact of STC on students, teachers, employers, and systems.
- On a statewide basis, California maintains school-level, not student-level data about student performance.
- As evidenced in individual LP STC implementation plans, there is a lack of common concepts and vocabulary, exacerbating evaluation difficulties associated with a lack of common measures across LPs.
- California's response rate to STW-related surveys, and therefore the availability of key comparable quantitative data, is notably low. Specifically, California's response rate on the 1998-99 Progress Measures Survey is 53.3%, with only 24 of 45 LPs responding.

- Available data on STC implementation in California lack specificity with respect to either quality or intensity of STC activities.

In summary, the currently available data do not allow for strong inferences about the status of STC in California relative to the research questions of sustainability and student preparation, or how well LPs are meeting their goals. However, while existing data have important limitations, particularly with respect to STC impact and student outcomes, meaningful information on STC process and implementation can be gleaned from them.

Overall, our analyses of recent STC implementation, data quality, and data availability indicate that upcoming evaluation activities must strike a balance between (1) canvassing LP activities across the state to achieve a broad understanding of California's STC progress and impact and (2) delving deeper into a more limited number of LPs to better understand systemic change and sustainability of STC. Additional implications include the following:

1. Diverse STC implementation strategies suggest the need for some flexibility in data collection as well as common protocols/measures for Phase II evaluation activities.
2. Diverse implementation strategies aiming for impact at multiple levels (student, teacher, employer, local system, state system) necessitate evaluation at a variety of levels.
3. Because many STC activities aim to change students' attitudes as well as skills and knowledge, attitudinal measures are appropriate in conjunction with performance and other outcome measures.
4. Seeking correlations between STC activities and changes in student performance or attitudes in places where STC activities have been minimal (e.g., one Career Day over the course of a year) will yield minimally useful information. Therefore, evaluation activities need to focus on LPs where STC activities have been substantial.
5. While there has been limited implementation of complex school-based and work-based activities, we must focus on these activities, as they have the greatest chance for measurable student impact.
6. Given that existing data offer little to no comparability, standardized, well-defined indicators must be developed. Similarly, standardized, well-defined data-collection instruments and methods are necessary.
7. Given that many LPs, particularly new ones, are attempting to build systems, rather than isolated programs, evaluation of system change is critical.

California STC Evaluation Plan

Our attempt in this White Paper to define the baseline status of STC activities in California highlights the complexity of the California STC landscape, as well as the significant challenges inherent to evaluating California's progress and potential for sustaining a statewide STC system. At the same time, the great variety of the STC activities across the state described in this White Paper suggests that there is significant fodder for the Phase II evaluation of the impact and sustainability of STC in California. The following are four guiding principles that underlie the evaluation plan:

- The research questions dictate the focus of the evaluation.
- Triangulation of multiple methods and data sources will help ensure the validity of the evaluation findings.
- Stakeholders need regular opportunities and multiple avenues to inform the evaluation process.
- The evaluation study must successfully balance the need to minimize burden on LPs with achieving comparability in data and data gathering.

Evaluation Methodology

The evaluation methodology consists of four major categories of evaluation methods: a systematic review of data from extant measures, project-developed survey research (i.e., employer/labor survey and project-specific survey of LP leadership), a comparative analysis of California's STC effort to those of other select states, and longitudinal case studies. Both quantitative and qualitative evaluation research techniques will be used across the four methodologies. The first three evaluation methods are aimed primarily at cultivating breadth of information. In contrast, the longitudinal case studies will provide the opportunity for detailed, in-depth information to better understand complex issues, such as the impact of STC involvement on student outcomes, the contribution of STC to systemic change, and the sustainability of STC efforts.

1. Review of data from extant measures

Just as extant information was analyzed and synthesized for the White Paper, project staff will continue to examine existing sources of data for evidence related to this evaluation's questions of interest. Such external data sources include the Progress Measures Survey and the Local Partnership Survey. We will analyze and synthesize the information from extant sources across years to make comparisons and look for growth or other trends of STC activity within and across LPs.

2. Project-developed survey of LP leadership and survey of employers/labor organizations

The leadership of all California LPs will be surveyed with a project-developed instrument at key points during Phase II. The purpose of this survey is to collect targeted information from all LPs about their STC activities that is not available through existing information sources. It will be administered by mail twice during Phase II: Spring 2001 and Spring 2002.

A survey of employer and labor organizations was first administered in May 2000. This four-page survey asked employers and labor organizations about their awareness of STC, the nature of their participation in STC activities, their working relationships with the LPs, their perceptions about the benefits and challenges of STC, and their willingness to make long-term commitments to STC. This same instrument will be administered to employers and labor organizations again during the Spring of 2001 in order to obtain more comprehensive information about employer and labor involvement in STC.

One option for the second administration of the employer/labor survey, given the resources of this project, is to cast the second survey administration as a follow-up to the previous survey administration. Specifically, we are proposing a two-pronged survey approach for employers: (1) a re-survey of the actual respondents to the first survey and (2) a survey of another random sample of employers from the existing project database of employers. For labor organizations, we propose: (1) a re-survey of respondents to the first survey and (2) a survey of additional labor organizations identified by the LPs involved in the case studies.

3. A comparative analysis of California's STC effort with those of other states

In an effort to go beyond California data to understand STC in California, we will examine the performance of three exemplar states representing STC environments and strategies particularly relevant to California (Oregon, Michigan, and Florida) and will track the progress of STW in these three states. These comparisons should illuminate how California is performing relative to other successful states. The comparisons will center on key indicators from Progress Measures and LP Surveys that address system growth, sustainability, and availability/spread of STC student experiences. Also, interviews will be conducted with administrators in each state, focusing on STC rollout strategies and activities.

4. Longitudinal case studies

The strategy is to select 15 to 18 LPs for case studies. As was specified in the RFP for this evaluation study, $2.5 million will be distributed to LPs to conduct these studies. The overall sample should include a diverse group of LPs, representing different geographical locales, sizes, and implementation strategies. Consideration in the selection process will be given to the quality of the LPs' previous evaluation efforts, their commitment to using state-developed instruments, and the LPs' capacity to provide data, particularly student performance data. The case studies design will involve extensive use of both quantitative and qualitative techniques. With respect to quantitative methods, LPs will collect and analyze the following types of empirical data: numbers and types of schools, teachers, and students participating in STC activities; and student enrollment, attendance, and performance data.

Project staff will be responsible for providing orientation, training, and ongoing monitoring/technical assistance to selected LPs on the case study design and data collection. Project staff also will be responsible for the development of all common evaluation instrumentation, monitoring the data-collection efforts of the LPs, and summarizing and reporting the aggregate results from the case studies to the IAP. Individual LPs will be responsible for conducting the case studies for their respective sites, including collecting the data, conducting first-order data analysis (e.g., generating descriptive statistics), and reporting results (e.g., data summaries, evaluation reports).

Reporting of Evaluation Results

The results of the evaluation study will be presented in two separate reports: an interim report (due June 2001) and a final report (due June 2002). The interim report will summarize the evaluation research results through Spring 2001, serving to foreshadow the summative findings of the comprehensive final report.

Evaluation Overview

In January 2000, California's governor, in collaboration with the Superintendent of Public Instruction and the Chancellor of the California Community Colleges, contracted with WestEd and MPR Associates to design and conduct a statewide evaluation of School-to-Career (STC) in California. This evaluation is required under provisions of the School-to-Work Opportunities Act of 1994 (STWOA), which awarded funds to California to support the development of its STC system. Findings from the evaluation will be a key information source for the many federal, state, and local stakeholders who are working to improve our education system.

The overarching research questions listed in California's STC evaluation Request for Proposals (RFP) are:

- How has STC affected student preparation for post-secondary education and career entry?
- To what degree and in what ways has STC contributed to systemic change?
- Have STC principles penetrated the community deeply enough to be sustainable?

California's implementation and evaluation of STC depends heavily on the work undertaken by Local Partnerships (LPs), which have received the vast majority of STWOA funds. STWOA defines a LP as "a local entity that is responsible for local School-to-Work Opportunities programs" (Section 4(1) of STWOA). LPs are required to include employers; representatives of local educational agencies, post-secondary institutions, and organized labor; local educators; and students. There are 59 LPs in 1999-00; 45 state implemented subgrants and 14 federally-funded Urban/Rural Opportunities Grants (UROGs).

To meet federal requirements for STWOA funding, the evaluation must focus on the LPs' efforts to implement STC, and their ability to:

- provide students with "higher-quality academic and work site instruction than that previously provided to students";
- prepare all students "for viable careers. . . and with a clear understanding of the education requirements to reach their career goals";
- involve multiple stakeholders (parents, employers, etc.); and

- integrate "state and national skill standards, articulation, and all other applicable criteria into local STC implementation efforts."[2]

The evaluation RFP specifies that the evaluation be conducted in two distinct phases. Phase I includes the following components:

- a research synthesis of information on STC in California presented in the form of a White Paper;
- a design framework informed by the White Paper, for LPs to conduct in-depth longitudinal case studies;
- recommendations for distributing funds to LPs for these case studies;
- a survey of employers and labor organizations; and
- creation of a statewide evaluation plan.

Phase II of the evaluation involves implementing the evaluation plan, conducting a second survey of employers and labor organizations, and completing interim and final reports about the status and influence of STC in California.

Purpose of the White Paper

The main goal of this White Paper is to lay the foundation for the evaluation to be conducted in Phase II. The Paper focuses on the contextual factors that will impact the evaluation design, data-collection efforts being undertaken by LPs and external evaluators, and availability of data relevant to research questions presented in the RFP. Consistent with the RFP, the White Paper also serves the following specific purposes:

- provides baseline data on the extent to which STC components have been implemented in California;
- provides information on the extent to which data are currently being collected and the collection methods used, that will address the overarching research questions;
- identifies proposed research questions and the need for subsequent evaluation study design components;
- determines feasibility factors and contextual issues that will impact the evaluation study design and implementation; and

[2] California's School-to-Career Request for Applications (2000), p. 3.

- proposes a statewide evaluation strategy.

Using a variety of sources—including LP applications for STWOA funds, LPs' Quarterly Reports, data from two federally-sponsored longitudinal evaluations of STWOA implementation, and existing evaluations conducted for LPs (see Appendix A for a full listing of sources)—WestEd and MPR examined the status of STC in California. This Paper discusses these findings and emphasizes how they relate to designing a feasible evaluation strategy for Phase II.

Organization of the White Paper

The White Paper contains four major sections and is organized to provide readers with information about the national, state, and local contexts in which STC is being implemented.

Section I provides a brief historical view of School-to-Work (STW), describing the underlying national goals of the STWOA and how this legislation relates to other school reform efforts. This section also discusses California's efforts related to the STWOA and briefly summarizes work conducted through California Partnership Academies and the Carl D. Perkins Vocational and Technical Education Act (Perkins III), including its Tech Prep provisions.

The second section of the Paper provides readers with contextual information about STW implementation across the nation. It gives an overview of the main findings of three national studies of STW, with special emphasis on describing the institutional participants, career awareness activities, efforts to promote access for all students, implementation of career majors, curriculum integration, and work-based learning.

The third section narrows the focus to California, specifically describing the goals and strategies that LPs in California are using as they implement STC. It provides a rich description of how LPs are working to reach the goals set forth by the STWOA and to build their STC initiatives, giving illustrative examples of efforts related to school-based learning, work-based learning, connecting activities, and access for all students. Then, early quantitative findings from the Local Partnership Survey (1997-1998), conducted by Mathematica Policy Research for the Planning and Evaluation Service of the U.S. Department of Education, are presented. This discussion covers six major areas: partnership participants; career awareness and development; promoting

student access; career majors; curriculum integration; and work-based learning. Finally, this section discusses LPs' efforts to build a sustainable STC system.

The fourth section of the White Paper summarizes what is known, and not known, about California's STC system from existing data. It then presents implications of these findings for the evaluation design.

The Paper concludes with a comprehensive plan for evaluating California's STC system. Specifically, it describes the guiding principles for the evaluation, the major components and core data elements, and how results of the evaluation will be reported.

This section of the White Paper provides an historical overview of the evolution of STW, and brief discussions of related national and state legislation and reform efforts. This contextual information is helpful in understanding current efforts in California as the state works to create and sustain its STC system. The Smith-Hughes Act, passed by the United States Congress in 1917, was designed to support vocational education programs that were generally aimed at helping low-performing students prepare for occupations that did not traditionally require advanced degrees. Since that landmark legislation, efforts related to preparing students for the workforce have changed dramatically at the national and state levels.

From Vocational Education to STW

Educational studies released in the 1980s, such as *A Nation at Risk* (U.S. Department of Education, 1983) and *The Forgotten Half: Non-College Youth in America* (William T. Grant Foundation, 1988), reflected a growing perception that secondary schools were not preparing students adequately for work or post-secondary education. According to a report by the Department of Labor Secretary's Commission on Achieving Necessary Skills (SCANS), released in 1991, fewer than half the students graduating from high school in the United States had the skills and knowledge they would need for productive work in the labor market. Moreover, colleges and universities reported that students entering their institutions had low levels of academic knowledge. These reports, combined with shortages of qualified entry-level employees in the business community, led to changes in the vocational education model. Early vocational education was directed toward students who wanted to work in occupations that typically did not require advanced degrees. High school students were placed in tracks depending on their academic abilities. Generally, high-performing students who were preparing for college took few or no courses related to vocations, and low-performing students placed in the vocational education track did not take courses that would enable them to enter college.

In the 1990s, the goals of vocational education initiatives began to change and a new STW model emerged. In contrast to federally-funded vocational education initiatives supported by the Smith-Hughes Act, current STW initiatives blur the distinction between academic and vocational education. STW initiatives are now designed to develop academic and work-based skills for **all** students. While there are many different approaches to STW, all have at their core the goal of improving academic achievement while at the same time providing students with marketable,

work-based skills. Another common element that distinguishes vocational education from STW initiatives is the use of a formal, three-pronged approach in STW: students engage in school-based and work-based activities, and schools and their community partners provide vehicles to connect the two. STW initiatives are required to promote the involvement of multiple stakeholders in the education process. These include employers, labor organizations, teachers, parents, and community-based organizations. Moreover, STW programs often emphasize the integration of industry-related and academic standards into classroom instruction.

Major Legislation Supporting STW

Carl D. Perkins Vocational and Applied Technology Education Act

The Carl D. Perkins Vocational and Applied Technology Education Act of 1990 (Perkins II) helped create the new vision that ultimately became the STW model. This legislation promotes "reform, innovation, and continuous improvement in vocational and technical education" (Summary of Public Law 105-332) so students will meet rigorous academic and industry standards and be prepared for post-secondary education and high-skill, high-wage careers. Perkins II emphasizes strong linkages between secondary and post-secondary education; professional development for teachers, counselors, and administrators; and the active involvement in education of parents and employers. Perkins III, authorized in 1998, goes even further in supporting these types of connections by developing core indicators of performance and promoting integrated "one-stop" education and workforce development systems at the state and local levels. This legislation also established increased accountability for states, programs, and schools by setting state levels of performance and subsequent penalties for non-compliance with core indicators.

Tech Prep

One aspect of the Perkins legislation that further supports the evolution of vocational education to STW is funds set aside under Title III (E), Tech Prep, which was enacted in 1990. Title III of Perkins provided funding for special grants for high schools to work with two-year colleges or apprenticeship programs to create a coherent sequence of study for students that combines academic and vocational courses. Tech Prep strengthened the role community colleges play in STW programs, and enhanced articulation between secondary and post-secondary institutions.

Typical Tech Prep programs begin in students' third year of high school, and continue until students have finished two years of post-secondary study and obtained an associate degree in a technical field of work. Tech Prep, reauthorized as part of Perkins III in 1998, has seven key components:

- the development of articulation agreements between secondary and post-secondary participants;
- the design and implementation of an educational program with a common core of courses leading to required proficiency in mathematics, science, communications, and technologies which leads to an associate degree or certificate in a specific career field;
- the inclusion of Tech Prep program curricula appropriate to the needs of secondary and post-secondary students;
- in-service training for teachers;
- training programs for counselors;
- equal access for all students; and
- preparatory services that assist all populations.

The School-to-Work Opportunities Act

In 1994, the STWOA was passed by Congress for the purpose of underwriting the initial costs of establishing statewide STW systems in all states. The Act has many goals similar to Perkins in that it emphasizes the integration of academic and vocational education and rigorous standards for all students. The STWOA specifies that state STW systems should be integrated with systems developed under Goals 2000: Educate America Act and the National Skill Standards Act of 1994. These systems should be part of a comprehensive educational reform strategy designed to:

- enable students to earn portable credentials;
- help all students reach high academic and occupational standards;
- prepare students for high-skill, high-wage careers; and
- increase students' opportunities for further education.

The STWOA indicates that state STW systems should involve close collaboration between educators and employers. These connections will facilitate using workplaces as learning environments, and promote the formation of LPs designed to link schools, private and public employers, labor organizations, government, community-based organizations, parents, students, and other stakeholders.

One-time, five-year competitive grants to states were authorized under STWOA. States are expected to identify a range of resources to sustain the STW system when federal funds sunset in 2001.

Eight states received implementation grants in 1994 (totaling $100 million); 19 additional states received funding in 1995 (totaling $245 million). In 1996 and 1997, 10 states were awarded grants totaling $350 million (California received $21,900,000). By 1998, all states had been awarded multi-year STW implementation grants. In addition to state grants, Urban/Rural Opportunities Grants (UROGs) were awarded to LPs focusing on youth in high-poverty areas as well as other Local Partnership Grants from the Departments of Education and Labor.

States are allowed considerable leeway in designing their STW systems so that each state can work to meet its specific needs and challenges. However, all systems are expected to include certain core elements:

- integrating school-based learning (e.g., career awareness and exploration, career majors, career counseling) and work-based learning (e.g., work experience, workplace mentoring, instruction in general workplace competencies, job shadowing);
- connecting activities (e.g., providing students with school site mentors; providing technical assistance to employers; training teachers, staff, and other key stakeholders; encouraging active participation of employers);
- integrating academic and occupational learning;
- establishing effective linkages between secondary and post-secondary education;
- establishing career majors (coherent sequences of courses or fields of study that prepare students for a first job);
- providing opportunities for students to learn all aspects of the industry in which they are interested (e.g., technical and production skills, planning, management, finances); and
- ensuring equal access for all students to the full range of program components.

As a result of this flexibility, state profiles describing their STW approaches show a wide variety of implementation strategies. Regardless of the implementation approach used, however, STWOA encourages states to incorporate STW into their overarching education reform strategies.

Other National Reform Efforts

The U.S. Department of Education also initiated related programs aimed specifically at high schools, such as the Comprehensive School Reform Demonstration developed within OERI

(Office of Educational Research and Improvement) and the New American High Schools (established by the Office of Vocational and Adult Education). Like Perkins III and STWOA, these reforms include integration of academic and vocational curricula and the establishment of partnerships with employers. Moreover, influential high school reform networks, such as the Coalition of Essential Schools and the "High Schools that Work" project, support many of the principles underlying the STW movement because STW goals are consistent with the stated principles of these reform movements. Specifically, STW as a reform effort can provide:

- meaningful context for students' academic work across disciplines;
- high expectations with real-world standards;
- opportunities for all students to be actively engaged in the learning process; and
- authentic learning environments that motivate all students to learn and to pursue additional education.

California's STC Plan

Soon after passage of the STWOA, California received a federal developmental grant that provided the foundation for creating the state's STC plan. This includes establishing the STC Task Force (later the Advisory Council), the Interagency Partnership, and developing implementation grant structures to fund LPs.

California's STC Vision

California's vision for STC is that all students "will develop a love of learning, and be fully prepared for rewarding high wage, high skill careers; productive citizenship; and personal and professional growth" (1996 Application, p. 1). In creating the work plan, a strong effort was made to reach "full consensus" of "all of the principal policy and political interests in education reform" (Work Plan, p. 2).

The initial principles on which California's STC system was built are:

- The system is an integral part of broad education reform, workforce preparation, and economic development efforts.
- Education reform is of primary importance.
- All students must have access to an STC system.
- Industry plays a central role in the emerging STC system.

- California's STC system has a strong and clear partnership structure.

Award of Development Grant—1994

To develop the state's STC plan, California's governor appointed a 27-member STC Task Force. The Task Force was charged with developing and presenting a comprehensive state plan to the governor for approval, which would build on and integrate existing STC programs that were currently operating in the state, including Tech Prep and Partnership Academies. With the primary goal of developing a plan that would increase the efficacy of California's educational system, while better preparing students for a competitive and changing economy, the Task Force presented an initial plan with the following key recommendations:

- *Career Pathways, Standards, and Certification*
  Improve K-12 and community college education systems by better orienting students to career opportunities and providing opportunities for learning in work site and community settings. High Schools should be accountable for providing students with the core skills and knowledge they need to enter universities and the workforce.

- *Local Partnership Development and Demonstration*
  Ensure statewide implementation through LPs where organizational and governance arrangements are made at the local level. Initial implementation grants will be awarded to LPs to establish a series of comprehensive demonstration sites, selection based on the comprehensive nature of their proposed system.[3]

[3] California's School-To-Career State Plan, Chapter II Executive Summary, pg. 2.

- *The Roles of Business and Labor*
  Demand greater involvement by employers and labor unions and provide systems and incentives to sustain that involvement.

- *Collaborative Administration and Implementation*
  Develop a structure where the administration and implementation of the state's plan are guided by representative advisory bodies and/or committees whose members include subject matter experts and representatives of key interests.

To assist in managing the state plan, the Interagency Partnership (IAP) was established with key representatives from the California Department of Education, the Chancellor's Office of the California Community Colleges, and the Employment Development Department. The role of the IAP is to provide state-level management including vision and leadership; marketing and communication support and strategies; program and performance oversight; evaluation assistance; fiscal oversight; and day-to-day management and system coordination. Creation of the IAP increased state-level collaboration among educational and workforce development agencies.

Implementation Grant—1996

In 1996, California received a state implementation grant of $21,900,00. (In total, California may receive up to $130 million over a five-year period.[4])

Basic goals for California's STC system include:

- improving connections of K-12 schools and community colleges with universities, business, and labor;
- increasing career awareness activities for all K-8 students;
- organizing instruction at the secondary level around career pathways with integrated academic and vocational/technical education;
- creating a certification system that incorporates occupational and professional requirements;
- developing policies regarding incentives for business and labor participation in the implementation of STC to encourage employer involvement; and
- instituting a performance-based system to monitor STC implementation.

Based on the lessons learned during the development phase, California's governor made additional appointments to the STC Task Force, creating the STC Advisory Council. Prior to

[4] California School-To-Career Statewide Evaluation RFP, (1999).

launching a statewide plan, the Advisory Council formed a marketing advisory group to assist in determining how best to develop a statewide marketing plan. A poll of California parents' knowledge of STC was conducted to learn how and where to focus communication efforts. Based on the survey data and with the assistance of regional media collaboratives, a statewide marketing plan was designed to increase the general population's STC awareness through: PSAs, a general brochure, and by establishing "800" lines to field questions. Strategies were also developed with Junior Achievement.

To assist in the complex issues surrounding implementation, the Advisory Council established various committees and advisory groups representing the interests of education and industry as well as ensuring the comprehensive implementation of the state plan. Four committees were appointed:

- Education Issues and Practices, to advise on key program development and implementation issues.
- Student Assessment and Certification, to make recommendations on how best to coordinate and integrate STC principles into the statewide assessment system and assist in linking STC to state adopted standards and assessments.
- Employer and Labor Participation, to develop models and systems to increase and sustain industry and labor participation as well as focus on addressing barriers to involvement by industry and labor.
- Systems Evaluation and Accountability, to deal with issues related to the long-term success and viability of the statewide system and design the system evaluation. The Committee coordinates an evaluation plan with an evaluation consultant, assists in developing an evaluation design and identifying data elements needed, provides funding for longitudinal case studies, and assists in developing a statewide MIS system and data-collection strategy for K-12 to eventually provide follow-up information on student's post-secondary outcomes.

Local Partnerships

Since the inception of California's STC plan, it was determined that LPs would be at the heart of the state's comprehensive STC system. To distribute funds to local STC advocates, the state was divided into twelve regions aligned closely with the K-12 Superintendents, Goals 2000, and Community College regions.[5] Initially, the state-funded LPs in defined regions to ensure that California's geographic and social diversity was represented; however, future funding has since been on a competitive basis. (Independent of state-funded LPs, approximately 14 federally-

[5] State of California Implementation Grant Continuation Application Matrix – DRAFT May 2000.

funded UROGs have been awarded in California.) Grant selection criteria for LPs include demonstration of equal opportunity and access by all students and require strategies for sustainability and systemic implementation.

Over the past four years, California has awarded over $94 million to 45 LPs (15 in 1997, 37 in 1998, 45 in 1999 including 7 federal and 38 state sites) with yearly awards ranging from $96,000 to $1.5 million.[6] More than 90% of California's student population are served by this comprehensive initiative.[7]

Support Strategies

To provide additional support to LPs, additional associations were established. With the assistance of K-12 schools and Community Colleges, The Regional Coordinators Network was established to assist the state in its rollout strategy. The role of the Network is to develop plans to coordinate outreach to funded and unfunded sites and to provide technical assistance to LPs as needed. The Northern and Southern California STC Practitioner Coalition was established to provide collaboration opportunities among the LPs in order to foster integrated regional system implementation. In an effort to disseminate information regarding useful tools and effective practices learned during this implementation period, an RFP has been established for a resource-clearing house to provide information on-line or in hard copy.

The Advisory Council also established several competitive awards focused on strategic planning and implementation. A contract was awarded to CSU Hayward to integrate STC into the state's pre-service teacher prep program. Ten teams were formed throughout the state to integrate STC pedagogy and practice into higher education pre-service programs. The Coast Community College District/Orange County received funding to develop aligned curriculum and provide training to LPs regarding work-based learning. A Technical Assistance Peer-to-Peer grant was awarded to Tulare County Office of Education to provide LPs with strategic planning assistance and establish Tulare as a demonstration evaluation site. A technical assistance grant was also awarded to CSU Bakersfield to focus technical assistance to Challenge Districts and all LPs.

[6] Schedule of Funding to Local Partnerships, Attachment 5.
[7] School-to-Career Significant Interagency Accomplishments to Date, July 1999.

In collaboration with the EDD's Labor Market Information Division, the California Department of Education (CDE) has begun to identify business and industry sectors that will be the foundation of Career Pathways and industry skill standards statewide. The goal of the Career Pathways effort is to identify 15 economic sectors (14 have been identified for approval by the Advisory Council) that will be used as a framework for infusing career-related information and experiences into the curriculum, and assist in program planning and career guidance information specific to each of the state's 12 regions.

As demonstrated by the state's efforts in supporting a strong network of LPs as well as developing a state-level support system, California's STC implementation strategy is a "bottom-up" as well as "top-down" approach. The goal of this purposeful approach is to continue building on the successes of the local efforts. Thirty-eight state-funded LPs will continue to receive funding through 2000 and 23 through 2001. Committees initially established for the implementation period continue to strategize ways in which successful efforts can be sustained after federal STWOA funding ceases in 2001.

Major STC Efforts in California

Various initiatives currently exist in California that were created in the 1990s to provide career awareness and employment-related skills. Some of these initiatives were specifically designed as opportunities for job training, such as those funded by the Job Training Partnership Act (JTPA), which provided services for economically disadvantaged adults and youth, dislocated workers, and others who faced substantial employment barriers. (The Workforce Investment Act of 1998 (WIA) rewrites current federal statutes governing programs—including the JTPA, replacing the statutes with streamlined and more flexible components of workforce development systems.)[8]

Other California initiatives, such as California Partnership Academies, have broader aims and emphasize the integration of school- and work-based learning, and promote curriculum integration, K-16 articulation, and the involvement of employers, labor organizations, schools, parents, students, and other key stakeholders. These initiatives are closely aligned with national activities that support STW and also support California's own STC effort.

[8] Workforce Investment Act of 1998 (On-line), Available www.telamon.org/wia/index

These key initiatives, which preceded California's successful application for STWOA funds in 1996, will be described below. These initiatives provided the foundation for California's current STC efforts.

California Partnership Academies

California Partnership Academies, which are prototypes for what are called "career academies" throughout the nation, are funded by the state. California Partnership Academies are a strong component of California's STC system. Over the last decade, the number of California Partnership Academies has been growing steadily.

The roots of California Partnership Academies can be traced to reform efforts in Philadelphia, where a number of career academies were created to prepare high school students for occupations that do not typically require a bachelor's degree, such as automotive mechanics or electronics. In the early 1980s, two academies were created on the San Francisco peninsula. These programs targeted at-risk students in danger of dropping out of high school and were funded by community organizations, foundation grants, and business partnerships, not by the state.

Documented success of the career academies in these two schools led to the establishment of state-supported academies throughout California in diverse fields such as law, business, tourism, and finance. While the original academies in Philadelphia were designed as vocational education programs, the goal of California Partnership Academies is to offer students high-level vocational training in selected occupations, as well as to provide them with the option of going to college. Although academies differ on a number of dimensions, they share three basic features, including:

- small learning communities, where a cluster of students share several classes each year and have the same teachers for at least two years. Typically, an academy program operates as a school-within-a-school;
- a combination of a career theme and college preparatory curriculum. Academic courses meet high school graduation and college entrance requirements. The curriculum includes work-based learning opportunities; and
- strong partnerships with employers.

Evaluations of career academies suggest that these programs can be effective in reducing dropout rates, improving school attendance and increasing graduation rates. There is also some evidence that these programs have led to better work attendance and job performance by graduates.

In 1994, the STWOA explicitly listed career academies as one of the "promising practices" for preparing students for both work and further education. Moreover, the career academy approach was also supported by the CDE in its publication, *Second to None: A Vision of the New California High School* (1992), which provides direction for restructuring high schools. The report recommends that students choose

> "an organized program around a specific focus that combines academic, applied academic and field experiences. These program majors can be organized according to themes built around career fields . . . or integrated academic disciplines. . . Many integrated programs are designed to meet college entrance requirements, while also providing students with career-related technical and practical skills" (*Second to None*, p. 21).

With the underlying support of the STWOA and the CDE, the number of career academies has increased in California, and in some instances has been the basis for district-wide reform. For example, in Oakland, a district-wide policy was adopted in 1996 that would eventually lead to all students enrolling in career academies in 10th to 12th grades. In some cities in California, extensive networks of academies now exist. A 1996 report to the CDE shows that the state-funded academy population was fairly stable between 1992-93 and 1995-96, with 45 academies and enrollments of approximately 5,500 students in grades 10–12 in each of these four years. However, by 1998, California had over 200 academies, and projections suggest that the number of academies will continue to increase.

Tech Prep

Like career academies, Tech Prep programs are designed to integrate academic and vocational education. Moreover, they both focus on enhancing academic performance, improving articulation between secondary and post-secondary institutions, and helping students to be better

prepared to enter the workforce. Finally, both include programs in a wide variety of areas such as engineering technology, business education, agriculture, industrial technology, and health careers.

From 1993 to 1997, about $12 million per year was allocated for Tech Prep efforts in California, with the following goals:

- establishing a formal structure for articulation within each college district service area for the development of Tech Prep programs;
- developing Tech Prep Education programs to provide a formal course of study for all students;
- expanding current articulation efforts to all segments of secondary/higher education within the state; and
- increasing statewide awareness of the benefits of program participation.

To meet these goals, three program components were created for Tech Prep: local Tech Prep consortia, statewide resource centers, and special statewide projects. By 1998, 83 consortia were operational in all of the state's community college districts, and six Tech Prep Resource Centers were created. Three statewide projects were also created related to evaluation, outreach and guidance, and student follow-up. In 1998, Tech Prep was offered in over half of the state's high schools.

An evaluation of Tech Prep in California (Evaluation and Training Institute, 1997-1998) identified factors that contributed to "effective" Tech Prep consortia, and found that these consortia had the following characteristics:

- a clear understanding of the goals and purposes of the different reforms;
- joint committees, including representation from all stakeholder groups, to integrate existing reform efforts; and
- one year of planning prior to implementing Tech Prep.

Other major findings related to Tech Prep include:

- Tech Prep in California "lacks a formal, consistent statewide definition," which has led to "general confusion concerning the goals and objectives of Tech Prep, and it has also allowed each consortium to define and implement Tech Prep in its own particular way"[9].
- Articulation agreements between secondary and post-secondary institutions exist in all consortia in some form, but there is typically no formal procedure for tracking students as they move from one educational level to another.
- Curriculum development as a direct result of Tech Prep has been minimal.
- Tech Prep does not explicitly require work experience or work-based learning. STWOA funds have been used by some Tech Prep consortia for work-based learning.

This evaluation also examined the interrelationships among Tech Prep in California, federally-funded LPs, and Academies. Evaluators report:

> "The greatest barrier to the successful integration of reform efforts throughout the state has been the recurring 'turf' battles between members of different interest groups.[10]. . . Lack of a clear understanding of the goals and purpose of Tech Prep and STC has hindered efforts to integrate."[11]

California's Regional Occupational Centers and Programs (ROC/Ps)

The mission of California's ROC/Ps is to "provide quality career training programs which contribute to students' educational achievement and to the economic development of California through career guidance, employment training, job development, and other educational support services for high school students and adults." There are currently 72 ROC/Ps operating in California. Predating the STWOA of 1994, ROC/Ps have accomplished the following:

- offered more than 100 different career preparation courses in Health, Consumer Homemaking/Home Economics, Business Office/Marketing, Industrial and Technology Education, and Agriculture;
- provided competency-based job training for over 450,000 high school and adult students;
- served a diverse range of students by working in conjunction with school districts and articulating with community colleges and state universities; and

[9] Evaluation and Training Institute, 1997-1998, p 15.
[10] Ibid. p 1
[11] Ibid. p 27

- collaborated with other federal and state agencies and programs, including STW, Welfare to Work, Job Training Partnership Act, the Department of Rehabilitation, and Private Industry Councils.[12]

California's One-Stop Career Center System

In January 1997, California received an $8 million implementation grant from the U.S. Department of Labor to develop and implement a statewide One-Stop Career Center System. Six months later, California awarded 18 grants totaling nearly $5 million to local One-Stop partnerships throughout California. Known as California WorkNet, this system of One-Stop partnerships and services supports the integration of education, job training, and employment programs, services, and information, to ensure they are delivered in a comprehensive, customer-focused manner. Services provided by this system are directed towards job, education and training seekers, as well as employers.

Summary

California's STC environment includes many important components (a statewide system of LPs, a state STC plan, coordinated governance at the state level, involvement of diverse stakeholders, and substantial pre-STWOA STC initiatives, such as Tech Prep and Partnership Academies). Furthermore, California has kept pace with and built on federal STC legislation and initiatives. However, STC and its national context, which is important both for California's STC success and for its STC evaluation, are changing rapidly as federal funding sunsets.

[12] California Association of Regional Occupational Centers and Programs, (On-line), Available www.carocp.org.

National Progress on Implementing a STW Effort

To assess California's STC effort, it is important to place the state's accomplishments in a national context. Understanding how the STW system has developed across the country since 1994 will ultimately allow for a comparison between California's system and national results. Reviewing the national studies of STW implementation will allow us to answer some of the following questions:

- In what ways is California's experience similar to the national experience? In what ways is it different?
- What have been the national challenges and accomplishments and how do these compare to California's experience?
- What data are collected by national studies, and how should this influence the evidence needed to evaluate STC in California?
- What does the wide variability of STW implementation across the nation suggest about what we can expect of STC in California?

This section of the Paper gives an overview of the main findings of three national studies of STW, with special emphasis on describing the institutional participants, career awareness activities, efforts to promote access for all students, and implementation of career majors, curriculum integration, and work-based learning.

Funded by the National STW Office, three major studies—the National Evaluation of STW Implementation (hereafter referred to as the National Evaluation), the STW Progress Measures (hereafter referred to as Progress Measures), and STW in the 1990s: A Look at Programs and Practices in American High Schools (hereafter referred to as NLSY), have collected and reported information on how students, schools, districts, employers, and communities are responding to the call for more comprehensive, coordinated school reform that links schooling to the world of work. (See Appendix B for an abstract of the studies). These studies show that there has been a surge of activity encouraged by the STWOA during the 1990s. Assessing the extent to which this has substantially changed the relationship between schools and work or the awareness of students about the world of work is a more difficult question, one that is unfortunately not yet definitively answerable with the available data.

Key Findings from the Three National Studies

Governance/institutional participants

As encouraged by the STWOA, LPs involve a wide variety of educational institutions and employers.

- By the fall of 1997, 34 states had formed 1,152 LPs, covering 83% of their secondary school districts and 90% of all students of high school age in the grantee states (National Evaluation, p. 29).
- Approximately 55% of the schools involved with LPs are elementary, 20% are middle/junior high, 20% are secondary schools, and 6% are other grade-level configurations (Progress Measures, p. iii).
- Nearly 178,000 private, public, and nonprofit employers are engaged in partnership activities, 109,000 of which provide work-based learning positions to students (Progress Measures, p. 21 and p. 23).
- Nearly 2,600 post-secondary institutions—two- and four-year, public and private, as well as proprietary schools—work with LPs. Of this total, 48% of these are two-year institutions, 36% are four-year, 7% are private career schools, and 10% are other types. Only 4% of LPs report no linkage with any post-secondary institution. (Progress Measures, p. 6).

Although STW was intended to integrate education and workforce development efforts, STW is an enterprise typically led by educational institutions in most states. Of the 37 funded states, 22 chose to locate the state STW office in the department of education. With regards to the 15 other states: two elected to administer STW through a department of labor or commerce, eight granted oversight to a workforce development board, and five decided to locate the STW office within the Governor or Lieutenant Governor's office (Erlichson and Van Horn, 1999, p. 5). Similarly, at the local level, 54% of LPs are led by a school or school district, 7% by a post-secondary institution, and only 5% by an employer or business group. The other 34% fall into categories of either "other" or "none named."(National Evaluation, p. 37). In sum, school districts and high schools typically lead the STW effort at the local level, with the following levels of collaboration with other key groups: employers (most extensively), post-secondary institutions (less extensively), and organized labor (least extensively).

Career development

The national evaluations indicate that most states and LPs emphasize broad career development over other components of STW implementation (National Evaluation, p. xv). Career development (the process through which students understand their place in the world of work)

involves a continuum of activities: career awareness, career exploration, work exposure, career guidance, and post-secondary and/or employment planning. Often beginning as early as the elementary grades, students become aware of the skills critical to success in the world of work.

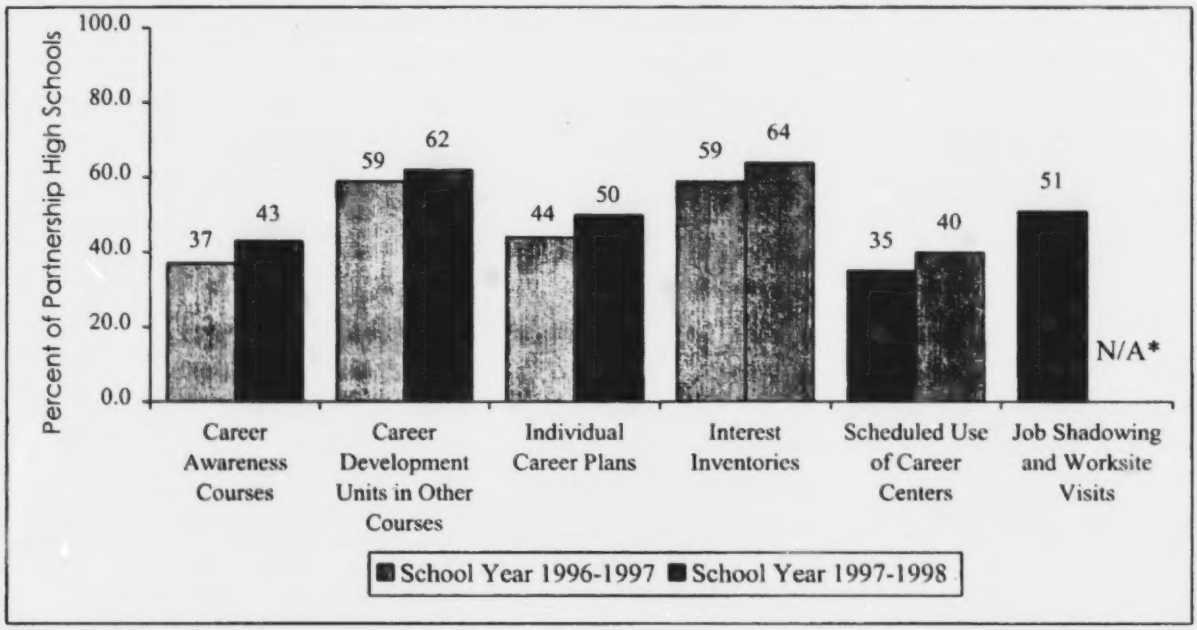
Figure 1 depicts the growth in availability of different categories of career development activities from the 1996-97 school year to the 1997-98 school year. Specifically, it shows that higher percentages of high schools are introducing practices like career awareness courses, career development units in other courses, individual career plans, interest inventories, and scheduled use of career centers (National Evaluation, p. 60). Other key observations about career development activities across the nation include the following:[13]

- In 1998, about four out of five seniors participated in interest inventories, employer talks at schools, and/or work-readiness classes, and two out of three participated in a job-shadow or work site tour at some point during high school (Ibid, p. 62).
- In 1997, about half of elementary schools in LPs reported offering significant career information within the curriculum. One year later, this increased to about two-thirds of elementary schools (Progress Measures, p. 10).
- In 1998, 68% of middle/junior high schools in reporting LPs provided structured exploration activities, such as individualized learning plans linked to career pathways offered in high school. This compares with 59% in 1997 (Ibid, p. 11).
- The NLSY study demonstrates the variability in types of career awareness activities in public high schools across the nation. College awareness, interest inventories, and career awareness are the most commonly offered career guidance services, with more than 90% of schools saying they offer these activities. Less prevalent, but still fairly common, are job site visits and skill inventories (at 73%). About half of public high schools create individualized career plans for students, and 44% of schools involve parents in these career plans.

[13] Data Source: U.S. Department of Labor, Bureau of Labor Studies, National Longitudinal Survey of Youth, 1996-97, Survey of School Administrators; U.S. Department of Education, National Center for Education Statistics, Common Core of Data Survey, 1993-94.

Figure 1. Growing Availability of Career Development Activities

[National Evaluation Fig. III.1, p. 60]



*The latest data from Local Partnerships on Work site Activities are for school year 1996-97.
Data Source: STW Local Partnerships Survey, fall 1996 and fall 1997, Mathematica Policy Research, Inc.
Note: The latest data from LPs on work site activities are for school year 1996-1997.

Promoting student access

Promoting student access involves ensuring that students from a broad range of backgrounds and circumstances—including both males and females; disadvantaged students; students from all racial, ethnic, and cultural backgrounds; students with and without disabilities or English proficiency; school dropouts and migrants; and the academically talented—are included in STW activities. The National Evaluation found that LPs have been relatively successful at promoting STW for all students, although participation rates among subgroups of students vary to some extent. Based on information from the National Evaluation's eight in-depth study states, Table 1 shows a breakdown of student participation in three STW components (comprehensive career development, workplace activity linked to school, and career-related academies) by students' gender, race, class rank, high school attendance, enrollment in "basic college prep" courses, and post-secondary education enrollment.

Table I. Student Participation in Three STW Components in the Eight In-Depth Study States, by Student Background, School Performance and Program: Class of 1996

[National Evaluation, Tables IV.1 & IV.2, pp. 104 & 108]

Group	Percent of Students Participating During High School		
	Comprehensive Career Development	Workplace Activity Linked to School	Career-Related Academies*
All students	63.3	16.1	11.7
Gender			
Male	62.1	13.6*	10.7
Female	64.4	18.4*	12.7
Race/Ethnicity			
African-American	67.0	22.7*	13.1
Latino	60.6	14.9*	17.2
White/other	63.2	15.2*	11.0
Cumulative High School Class Rank			
Top quartile	63.6	17.0	13.2*
Middle two quartiles	64.6	16.3	13.5*
Bottom quartile	63.1	15.6	9.5*
Cumulative High School Attendance			
Top quartile	68.4	14.7	17.0*
Middle two quartiles	64.4	17.3	16.7*
Bottom quartile	63.2	14.5	9.4*
Basic College Prep[14]			
Yes	61.4	14.7	11.7
No	65.7	17.4	13.2
Post-secondary Education Outcome			
Four-year college	62.7	14.3*	12.7
Two-year college	64.6	18.7*	9.9
No college	62.9	17.1*	12.0

Date Source: Transcripts of the class of 1996 and STW survey of 12th graders, spring 1996, Mathematica Policy Research, Inc.

* Differences among the groups are significant at the .05 level, two-tailed test.

*Career Academies are high school programs that are usually "schools-within-schools" (i.e., smaller administrative units operating within larger schools) that are occupationally focused.

[14] Basic College Prep is four years of English, two years of a foreign language, and three years of math, science, and social studies.

As shown in Table 1:

- The activities promoted in the STWOA are engaging students at all academic performance levels. For example, student participation in comprehensive career development or workplace activities that are linked to school is unrelated to student achievement (as measured by cumulative high school class rank in the eight in-depth study states). However, students in the bottom quartile of their class are slightly less likely than their peers to participate in career-related Academies (9.5% versus about 13% for the higher quartiles).
- Students who completed a college preparatory curriculum are just as likely as students who had not completed such a curriculum to participate in comprehensive career development, workplace activities linked to school, and career-related Academies.
- Students who enrolled in a four-year college are slightly less likely than their peers who either did not enroll in college or enrolled in a two-year institution, to participate in a workplace activity linked to school. However, they are very similar to their peers with respect to comprehensive career development and career-related Academies.
- Female students are involved at higher rates than male students in workplace experiences linked to school. In the eight in-depth study states, 18.4% of females are involved in such activities, versus 13.6% of males (National Evaluation, p. 108, table IV.2).
- African-American students also have higher than average participation rates in workplace activities (22.7%), relative to students from other racial-ethnic backgrounds (14.9% of Latinos and 15.2% of whites).

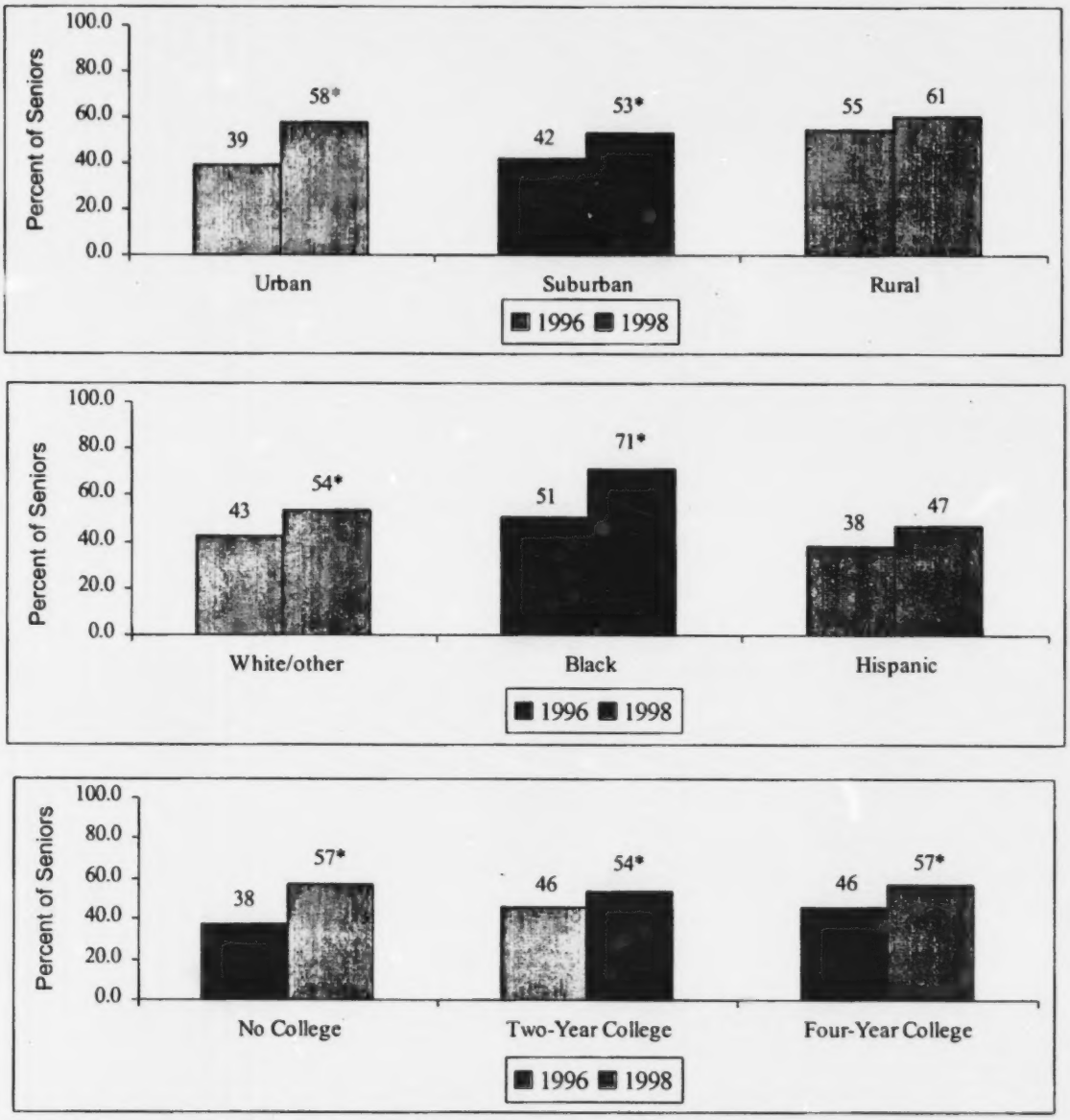
STW efforts aim to help all students develop the skills to explore alternatives and select careers. One key element in this exploration process is helping students identify broad areas of career interest. Focusing on this interest will help them choose advanced and elective high school courses and make decisions about post-secondary education. Examining change in the percent of students who defined a broad career interest while in high school reveals that in certain respects, STW is reaching a broad mix of students. In other respects, disparities remain. Figure 2 shows the growth from 1996 to 1998 of the percentage of seniors in the National Evaluation who selected career interest areas and were involved in STW activities by urbanicity, post-secondary plans, and race. As shown by this figure:

- In 1996, rural students were more likely than students in urban or suburban schools to select a career area. By 1998, rural students were still the most likely to choose a career area, but the disparity between urban/suburban and rural had shrunk considerably. For example, in 1996 there was a 16-point gap in the participation rates of urban and rural students. By 1998, this gap had shrunk to three points.
- Students in 1996 who had no plans for college were less likely to have chosen a career area than their peers who had planned to go to a two- or four-year college. By 1998, the participation rate of students with no college plans had increased to a level of parity with students with college aspirations.

- With respect to race-ethnicity, however, disparities have widened in the eight in-depth study states, as African-American students continue to choose career areas to plan for at higher rates than whites or Hispanics. In 1996, the white-African-American participation difference was eight percentage points, and the African-American/Hispanic participation difference was 13 percentage points. These gaps were wider in 1998: the white/African-American participation gap was 17 percentage points, and the African-American/Hispanic gap was 24 points.

Figure 2. Growth in Selection of Career Area and Involvement by Urbanicity, by Students' Post-secondary Plans, and by Race[15]

[National Evaluation, Figures IV.3, IV.5, & IV.6, pp. 116, 119 & 120]



Data Source: STW 12th-grade survey, spring 1996 and spring 1998, Mathematica Policy Research, Inc.
* Differences among the groups are significant at the .05 level, two-tailed test.

Career majors

Career majors are a key element of the STWOA. Participation in career majors signifies that students are pursuing a coherent sequence of courses that integrates academic and occupational learning, emphasizing all aspects of an industry, coordination of school-based and work-based learning, and, ideally, preparation for further education and/or training (*STW Glossary of Terms,* 1996). While a career path is more of an opportunity to introduce students to career options, a career major begins when the student makes a focused career selection. Ideally in California, the career-awareness-to-selection continuum is first introduced in elementary schools where students gain an understanding of the many career opportunities available. By middle school students begin to consider their individual interests and aptitudes in narrowing their career plans and by high school a career major may be selected and required career coursework completed. The learning continuum continues through post-secondary coursework until preparation is completed in readiness for career entry.

Because of the considerable flexibility granted to states, LPs, and schools, career majors rarely adhere closely to the definition of the STWOA. As actually implemented, career majors are often defined by three features that schools adopt to varying degrees (National Evaluation, p. 66):

- Students choose broad career areas after some exposure to information about careers.
- Career pathway brochures are published to help students choose elective courses that fit best with their career areas.
- Schools offer defined programs of study for students who choose a particular career area, and all students who choose a particular career area take the same course of study.

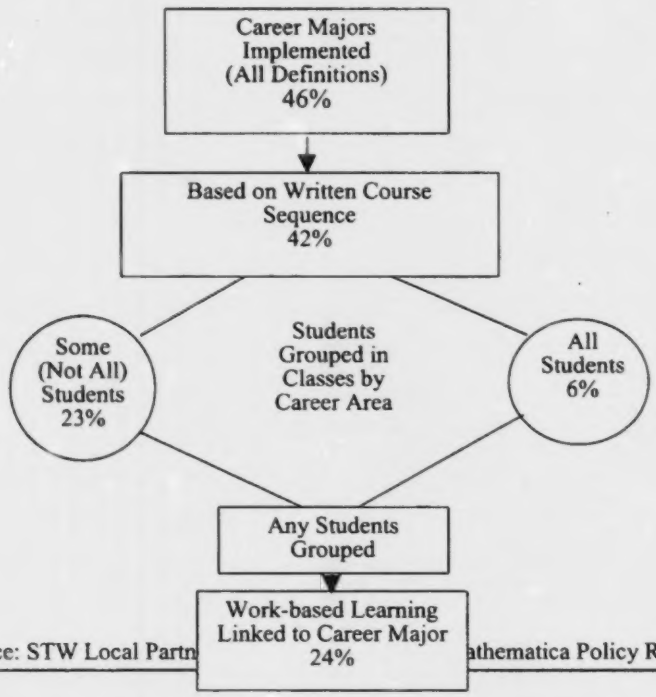
On the whole, career majors are given less emphasis than exploratory activities and career guidance (National Evaluation, p. 134). Site visits have suggested that most schools have structured programs for only one or two careers, and that typically no more than several dozen students are involved per school (Ibid). Reflecting the emphasis on career exploration, schools are more likely to use career pathways as tools for guidance counselors to use when helping students choose electives.

Figure 3 shows data from the National Evaluation on the prevalence of career majors in the 1997-98 school year. These data indicate the following:

- 46% of high schools report that they have implemented career majors in one form or another. However, little is indicated about the characteristics of these career majors.
- 42% of high schools in LPs report offering career majors based on written plans.
- Facets that require more planning and staff support are less common. More structured approaches that involve grouping students into the same academic or vocational classes are present in 29% of LP high schools.
- Only 6% of schools require all students to take a sequence of courses aligned with their career majors. (Data suggest that these are mostly vocational schools.)
- About one in four high schools offer career majors linked with work-based learning options.

Figure 3. Definition of Prevalence of Career Majors in School Year 1997-1998

[National Evaluation, Figure III.3, p. 68] (Percent of LP High Schools)


Career Majors Implemented (All Definitions) 46%
Based on Written Course Sequence 42%
Some (Not All) Students 23%
Students Grouped in Classes by Career Area
All Students 6%
Any Students Grouped
Work-based Learning Linked to Career Major 24%

Data Source: STW Local Partn [illegible] athematica Policy Research, Inc.

Curriculum integration

Integrated curricula involve academic and occupational/career subject matter taught in a manner that emphasizes relationships between and among different disciplines (*STW Glossary of Terms,* 1996). Integration can take the form of coordinated scheduling across subjects, introducing more academic content into vocational classes, incorporating more examples from the world of work into academic classes, or comprehensive programs where all instruction centers on career major themes. The proponents of curriculum integration view it "as a way to ensure that instruction in technical or practical skills includes a strong theoretical base and challenges students intellectually and that academic instruction emphasizes the ability to apply theoretical knowledge" (National Evaluation, p. 71).

The most commonly reported changes related to curriculum integration were in the curricula of specific courses. For example:

- More than half of high schools in LPs offer applied academic courses (where applied and project-oriented instructional materials and methods are used in academic classes) and this percentage has been increasing (54% of schools in 1996-97, 58% in 1997-98) (National Evaluation, p. 72).
- Almost one half of schools have a course that teaches all aspects of an industry in a vocational course, and this percentage has also been increasing (42% in 1996-97, 46% in 1997-98).
- 56% of secondary students in LPs were exposed to work-related curricula in 1998, and about one in three was exposed to coursework that integrates academic and vocational curricula. The percentages of students involved in these two activities is almost unchanged, indicating that while schools are reporting increases in opportunities for integrated curricula, students may be unwilling or unable to take advantage of them.

Site visits conducted for the National Evaluation indicate that "there are limits to the support for curriculum integration and constraints on its progress" (National Evaluation, p. 73). In many schools, academic teachers are less interested than vocational teachers in integrated curriculum. Academic teachers often worry that incorporating practical or hands-on learning will detract from the more traditionally-defined academic skills important for doing well on standardized tests, college admission, and success in college. Other factors include: teachers have limited common planning time across departments; applied coursework does not always meet college admission criteria; and time for curriculum development is severely constrained (Ibid).

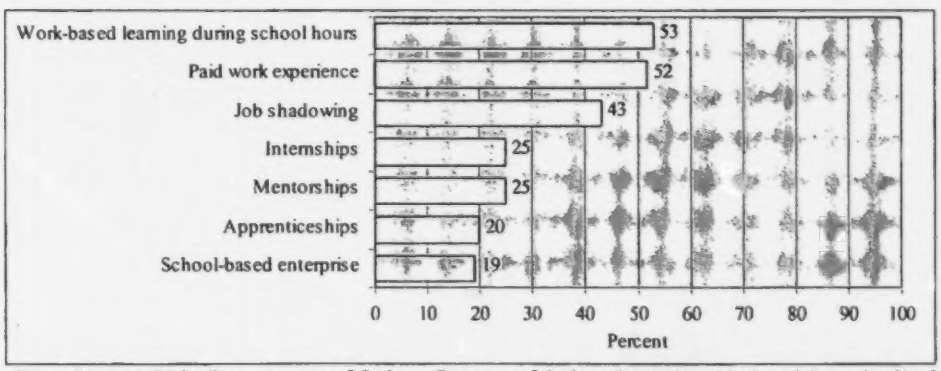
Work-based learning

The STWOA envisioned work-based learning as an integral part of broadening student awareness of the relevance of academic subjects and the expectations of the workplace. In practice, work-based learning takes many forms in U.S. high schools and funded LPs, ranging from one-time visits to work sites—with very little connection to what students are learning in school—to paid youth apprenticeships that are the culmination of a coherent sequence of coursework. Not surprisingly, the more intensive types of work-based learning opportunities are the least common. Figure 4 shows the percentage of public high schools that reported offering various types of work-experience activities in 1996. These data indicate:

- The most common work-based STW activities are work-based learning during school hours and paid work experience (both at just over one-half of high schools) and job shadowing (offered by 43% of high schools in 1996).
- Less common are internships, mentorships, apprenticeships, and school-based enterprises (all at 20-25% of high schools).

These figures do not tell us whether these placements are linked to school-based learning, however. In 1997, half of high schools in funded LPs reported offering work-based learning connected to integrated curriculum. By 1998, this figure had increased to 63% of high schools in LPs (Progress Measures, p. 13). Unfortunately, the percentage of students who take advantage of these opportunities is rather low. In 1998, only 16% of secondary students in funded LPs participated in a work-based learning opportunity connected to integrated curriculum (Ibid, p. 14).

Figure 4. Percentage of Schools Offering Work-Based STW Activities that Focus on Work Experiences, by Type of Activity: 1996 [NLSY, Figure 1, p.11]

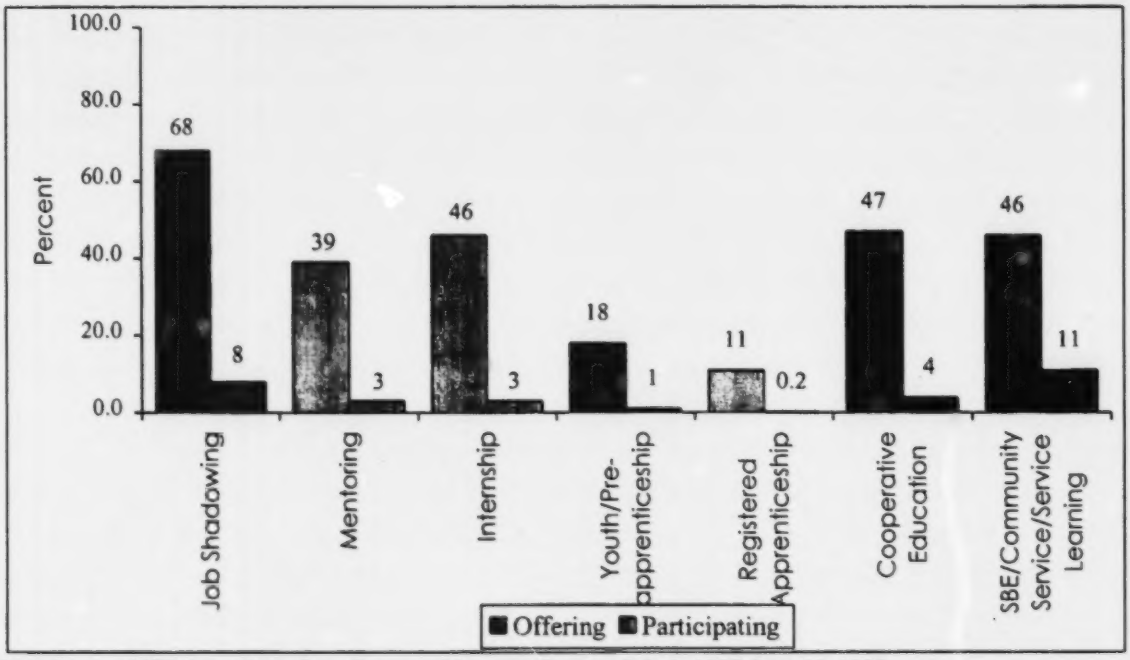


Data Source: U.S. Department of Labor, Bureau of Labor Statistics, National Longitudinal Survey of Youth, 1996-1997, Survey of School Administrators; U.S. Department of Education, National Center for Education Statistics, Common Core of Data Survey, 1993-94.

Figure 5 shows the percentage of high schools in funded LPs that offer various work-based learning opportunities and the percentages of high school students that take part in these activities. While many high schools offer work-based learning opportunities, Figure 5 suggests that only small percentages of students take advantage of these opportunities.[16]

Figure 5. Percentage of Secondary Schools and Secondary School Students in Reporting LPs Participating in Work-Based Learning Activities: June 1998

[Progress Measures, Figures 6 & 7, pp. 15 & 17]



Data Source: MPR Associates, Inc., Progress Measures Survey, July 1, 1997-June 30, 1998.

The National Evaluation confirms the finding that "brief work site activities for career exposure are most prevalent" (National Evaluation, p. 83). Because work site visits and job shadowing experiences can last only a few hours, school staff, employers, and students find them easy to integrate into the traditional school routine. More time-intensive opportunities require greater levels of commitment from students, school staff, and employers, and are understandably less common. Another important finding is that paid or unpaid positions obtained through school

[16] The participation rates should be considered conservative estimates because of the difficulty schools face in compiling data on work-based learning placements. Because of the complex and time-consuming nature of tracking student placements, it is quite likely that a certain number of placements are never reported.

provide students with greater learning opportunities in several respects (National Evaluation, p. 89-90):

- Compared to positions not obtained through school, students work in a wider variety of industries. Student work experience not obtained through school is concentrated in retail and food service establishments.
- More time on the job is spent training and students have more access to career information.
- Students receive more feedback on performance.
- Links between school and workplace are more common, which helps reinforce the link between school and work.

Unfortunately, these opportunities are relatively rare. Only about one quarter of paid or unpaid positions that students held were obtained through school in 1998 (National Evaluation, p. 86). (See Appendix F for Major Issues For Future National Research.)

Summary

The three national studies of STW show considerable progress in only a few years toward implementing key elements of the STWOA. However, many schools are providing only some parts of the STW school-improvement strategy, and few students participate in a comprehensive career-focused high school learning experience. The National Evaluation indicates that schools have a long way to go to integrate comprehensive career development activities, career-related academics, and paid or unpaid work experience that is linked to learning in the classroom—only about 3% of students have been involved in all three of these approaches. Moreover, although critical goals of the STW movement are to support high academic standards and produce positive student outcomes, it is too early to identify the role that STW is playing in achieving these goals (National Evaluation, p. 139). In most states, implementing STW and raising standards and accountability are two important school improvement efforts that have been operating independently of each other. As the next section about STC in California details, California has much in common with the nation as a whole, as well as significant differences.

Whereas the previous section of the White Paper focuses on the national context for STW, this section focuses attention squarely on California and the work of the LPs. It begins with a description of the goals and strategies that LPs are using to implement STC, as well as descriptions of their efforts related to these goals. A summary of these qualitative findings is then provided. Next, early quantitative findings from the Local Partnership Survey (1997-98) are described. The section concludes with a discussion of LP efforts in California specifically related to sustainability.

The State and LP Goals/Strategies

As part of examining LP efforts toward creating STC systems and toward attaining goals, it is appropriate to review the parameters in which the LPs operated. After receiving STWOA funds in 1996, California disseminated a Request for Applications (RFA) to identify LPs eligible to receive money to support STC implementation. To qualify for funding, LPs were required to show that the system would be accessible to all students and would not result in tracking. Other required elements include the integration of academic and vocational curricula in career pathway programs, as well as work site learning, career guidance, and connecting activities. LPs were expected to indicate how they would leverage, redirect, and reallocate local existing resources, and how funds would be used to support educational reform through systemic change, rather than supporting or developing categorical programs.

In the RFA, the state did not specify an implementation model for LPs to follow. Rather, LPs were given the freedom to identify successful approaches and to develop systems to meet their own needs. However, LPs were required to complete a Performance Matrix as part of the application process, which became the work plan for those LPs that received funding. The Performance Matrix focuses on four major goals:

- Comprehensive Local STC System;
- Quality, Effectiveness, and Scope of the LP;
- Participation of All Students; and
- Management Plan.

Within each of these four goals, the state specified "System Elements," such as "Work-based Learning" which are listed as elements of the Comprehensive Local STC System (see Appendix C). LPs were expected to address each of these System Elements at some point within the five-

year funding period. LPs were required to provide the following details for each of these System Elements:

- specific activities and strategies planned by the LP;
- timelines for completing these activities;
- outcomes (defined by the state as "specific measures of achievement" that "define the desired results"); and
- budgeted amounts allocated to the activities, and the organization or person responsible for the activity/strategy and outcome.

Because the state gave LPs freedom in choosing their activities and strategies, it is not surprising that LPs used a wide variety of approaches for addressing each System Element. An analysis of Performance Matrices of LPs was conducted, and examples of different activities and strategies for each Goal and System Element are listed in Appendix D. As this analysis shows, the activities and strategies LPs chose to use varied considerably. For example, for the System Element "integrated academic and applied education," LPs conducted staff development, gave teachers mini-grants, held district conferences, developed mentoring relationships between schools, and created career pathways—to cite just a few examples.

LP Efforts Related to Goals

The best available data source about LP implementation efforts that was completed by large numbers of LPs is the quarterly reports LPs completed for the state. The following discussion of STC activities is based primarily on qualitative information from those narrative quarterly reports, as well as a small number of in-depth STC evaluations conducted for individual LPs. It is organized around four main categories of STC goals that are the basis of the quarterly reports: school-based learning, work-based learning, connecting activities, and access for all students.

LPs' quarterly reports summarize their strategies and activities and provide a rich and detailed inside perspective on what they are doing to implement and sustain STC. However, these reports generally are not consistent with each other in style or format, and they do not include quantitative or comparable measures. Consequently, from these reports we cannot draw inferences about activity levels within or across LPs, nor can we discuss progress toward achieving goals. We are, however, able to provide illustrative examples of how STC initiatives are being implemented in the state of California. Please note that the use of examples from particular LPs generally reflects the quality and amount of data about various LPs provided to the

authors of this report. The LPs mentioned below are not the only LPs implementing exemplary practices.

We begin by reviewing implementation activities and then move on to sustainability efforts. Clearly, it is important to understand that the two are closely aligned. Many efforts that work toward sustaining STC are also integral to successful implementation. For example, longer-term goals, such as comprehensive curriculum change, come about through short-term innovations in school-based or work-based learning and enhanced professional development. Similarly, connecting activities that help stakeholders collaborate in the short term may lead to long-term connections with other school and community programs and will help sustain the STC effort.

School-Based Learning

School-based learning can be implemented in many ways. According to definitions provided by the National STW Office, the school-based learning component of an STC system should include activities related to career awareness, career exploration, and counseling programs at the earliest possible age, but no later than the seventh grade. Also, it should incorporate career major selection no later than a student's junior year of high school. Schools should provide a program of study that meets the academic standards of the state and meets post-secondary and skills certificate requirements. As an overall goal, they should also have a program of instruction and curriculum that integrates academic and vocational learning in all aspects of an industry. Finally, the school-based learning component of STC should provide students with easier transitions into post-secondary education programs, training programs, and the transfer of students between educational and training programs (*STW Glossary of Terms,* 1996).

As demonstrated throughout the next section, California LPs report a multitude of school-based activities to reach these overall educational objectives. LPs have been active in supporting the provision of career counseling and career exploration at all levels. LPs encourage the development of curricula that include relevant labor market data to support these standards.

Career exploration

School districts involved in STC are encouraging a progressive sequence of career and college awareness activities that begin in the elementary grades and continue past high school. At the elementary level, the focus is primarily on exposure to different careers by bringing in guest

speakers, engaging in role-playing and arranging field trips to local businesses. In middle school, career exploration takes on greater focus through more intensive individual counseling and the development of student portfolios, building upon the career exploration activities at the elementary school. In high school, schools are providing in-depth career exploration through more extensive career guidance and integrated career related courses. Some LPs are actively facilitating linking the activities from elementary school to secondary and post-secondary through career pathways and career clusters.

- Vandenberg Middle School teachers organized a two-week career exploration unit with their 8th grade class. Students took an aptitude survey and completed the "Pathways to the World of Careers" survey to discover their "pathways" of interest. They completed a personal survey comparing their values to possible occupations. Based on these activities, students chose two careers to research. Then, students investigated reasons for attending college, and developed both personal and professional goals. In the second part of this project, students were randomly assigned a "life"—a job, an income, marital status, number of children and pets. Based on this information, students created a budget, worked through tax forms, analyzed and graphed how they spend their time, and determined what they need to get a job. In another class, students prepared a cover letter, resume, and job application. They also had the opportunity to hear guest speakers talk about the education and skills necessary for various professions. Finally, students used their career research to register for high school courses. High school counselors noted these students were better prepared to select courses according to their interests.
- The East San Gabriel Valley LP actively ensures all school districts offer career awareness activities, labor market information, and opportunities for students to explore interests. The LP promotes a progressive range of activities beginning in elementary schools with career awareness activities, and continuing through post-secondary career preparation. Several high schools have instituted career pathways. Students in 8th grade design four-year education plans with STC in mind and have access to guidance software.
- A variety of classroom presentations take place at schools in the Imperial Valley Business/Education Coalition. In 1998, they reached an audience of 8,983 students. Presentations covered opportunities in law enforcement and fire departments as well as information about requirements for careers in state prison facilities, the medical field, civil engineering, music, retail/sales, and business/accounting. They also had 4,660 students participate in field trips to area businesses, community fairs, and festivals, and 11,517 students from all grade levels attended career fairs in 1998.
- A third grade class in the Santa Barbara STC Consortium spent time creating a career magazine. Each student investigated a career of his or her choice. As part of the assignment, students invited and arranged for professionals in the community to come and speak to the class about their careers. All of the students prepared questions to ask each speaker and took notes. The information they obtained from these speakers was incorporated into their career magazine.
- The North Coast STC Consortium engaged in several exploratory activities at each of its individual sites. A "Community Career Day" as part of "Parents as Experts Day" was established at the Sunny Brae Middle School. Also at the Sunny Brae Middle

School, they aligned career pathways with the elementary, middle, high and post-secondary schools and developed student portfolios. At the Jacoby Creek Elementary School, also within the North Coast Consortium, they implemented career shadowing, 8th grade aptitude assessments, career-related videos, Internet exploration and electives focusing on occupations.

Career counseling and guidance

In-depth career counseling and guidance present a great challenge—the ratio of students to counselors in California is over 1,000 to 1. However, some schools report that counselors are becoming partners with teachers to connect career and college guidance activities with classroom work. Also, school personnel are capitalizing on the interest of their community partners to make career guidance a hands-on, practical activity. Through training and collaboration with local businesses, guidance counselors are becoming more aware of the employment opportunities and demands of the workplace. The role of the counselor is being redefined to include guidance on career choice and opportunity. Unfortunately, data from LPs about career counseling are limited.

- When the Riverside County LP decided to review the needs of counselors in their area, it "became clear that counselors in high schools and middle schools know very little about career counseling. They are also unaware of the benefits of contextual and work-based learning strategies, and tend to place most of their students into courses that will meet college A-F requirements." Following this observation, the Riverside County LP made efforts to in-service counselors on STC concepts and to encourage them to create plans for students that allow them the full range of career and post-secondary education options.

High student performance standards

California's LPs are working to meet their goal of raising standards for all students in several ways. For example, referring to all students, the Sacramento Regional STC Alliance notes that "establishing clear standards for the knowledge, skills, and abilities required of our workforce benefits industry in recruitment, hiring, training, and promotion and helps educators develop effective, relevant curriculum" (LEED-Sacramento Regional STC Alliance). High skill standards ensure relevance and quality assurance in education.

High academic standards

Raising student academic performance is a primary goal of California's STC effort. Across the state, educators and their community partners are devising educational strategies that include STC learning opportunities while focusing on the growing concern for high student test scores and other positive student outcomes.

- In the Riverside LP, 103 teachers were released to participate in four days of Integrated Curriculum training and developed curricula tied to rigorous academic and skill standards.
- The minimum graduation standards across the Orange County Coalition/Vision 20/20 are being revised so they are aligned with new state standards and include STC components. Among specific areas being reviewed are the Math and Language Arts requirements and the inclusion of core competencies for career success and employability skills.

Curriculum development

One way LPs are working to implement school-based STC goals is through curriculum development. Some LPs are reevaluating their curricula and are revising them based on labor market information. By developing work-related curricula, LPs are creating institutional changes that will enhance sustainability. Some LPs have involved businesses and industry leaders in the curriculum development process, helping to ensure that students are exposed to realistic expectations and lessons. It will be important that teachers, educators and business partners

continue to be involved in curriculum development so current materials do not become obsolete with changing demands in the labor market.

- In the State Center Consortium, 25 secondary schools have curriculum that is enhanced with references to the world of work, which is estimated to affect 4,338 students. Also, 23 schools received training in curriculum integration/project-based instruction, including a total of 96 teachers, and potentially affecting 4,056 students.
- Participants at the State Center Consortium also drafted a student activity that uses labor market information. Resources from the EDD and the existing career pathway labor market report to create a student activity were included in the unit.
- Santa Barbara High School, within the Santa Barbara STC Consortium, has added several new components to its curriculum. Eight of the State Center Consortium Career Pathways are being introduced for students to choose from (Agriculture, Art and Communications, Business, Engineering Technology, Health Careers, Home Economics, Careers and Technology, Industrial and Technology, and Public and Human Services). They have also set up career academies, including the Multimedia and Art Design Academy and the Visual Art and Design Academy. These academies employ rigorous college-prep course work with technologically challenging, project-based learning. Also, new ROP classes have been instituted (Small Business Management, Computer Repair and Networking, and Horticulture and Geology) which lead to certificates and are articulated with the Santa Barbara City College.

Employability skills in the classroom

Some California schools are also raising the bar for technical education by connecting the curriculum to rigorous local or national technical standards. They are involving businesses and incorporating expectations for the workforce into curriculum and coursework. Several LPs have adapted the SCANS-based skills.[17] SCANS was developed with a board of business and industry representatives to promote employability skills by defining a three part foundation set of skills and a five part set of competency skills needed in the workplace. The foundation skills considered important for employability are basic skills, thinking skills, and personal qualities. The five workplace competency skills consist of the ability to use: resources, interpersonal skills,

[17] In June, 1991, U.S. the Secretary's Commission on Acquiring Necessary Skills (SCANS) produced *What Work Requires of Schools* which defined the workplace competencies and foundation skills required for effective job performance.

information, systems, and technology. Overall, LPs have been highly involved in recruiting business partners to actively participate in determining workplace needs and skills.

- The Butte County STC Consortium provided intensive professional development focused on implementing employability skills in the classroom. Eighteen educators participated in a three-day workshop and a week-long summer internship. The internships were hosted by 26 different businesses. The workshops provided teachers with SCANS, work-based and school-based STC activities, and curriculum integration training. While interning, teachers were required to document daily examples of SCANS being demonstrated at work sites. They also had to conduct a business information interview, write an internship summary, and prepare a lesson plan using their experiences and training.
- Pacificare hosted a SCANS skills training for site teams in March of 1999. The day included a comparison of the work-based and post-work-based environments and the relationship between the conventional and SCANS classrooms. Time was allowed for team planning and application of strategies presented. The Orange County Coalition, Vision 20/20, also trained 110 teachers in integrating one or more performance-based employability skills during 1998-99, including Vital Link, Career Beginnings, and Tech Prep.
- Charles Schwab is one of the most active businesses that provides comprehensive learning opportunities for students. School-to-Career at Charles Schwab begins in the earliest years of childhood education and continues through college and graduate school. As part of Schwab's workforce development, the focus is to integrate firsthand business know-how into SCANS-based curricula through a variety of activities and collaborations. These include K-6 speaking engagements and work site field trips for students; job shadowing and in-school company volunteers in grades 7-10; and mentoring, curriculum development and part- and full-time employment opportunities for high school juniors through post-graduate students.

Technical skills in the classroom

Interest in raising students' technical skills has moved in two directions: improving the rigor of vocational courses and giving all students broad exposure to the technical aspects of work through career-focused programs. Several LPs reported that they have incorporated industry-recognized technical standards into their vocational/technical curricula. These include standards that have been endorsed by the National Skill Standards Board, in fields such as banking/financial services, agriculture, and health services, and by national organizations such as the National Consortium for Health Science and Technology Education (NCHSTE), and the "Building Linkages" program which was initiated by the Office of Vocational and Adult Education (OVAE) in conjunction with the STW Opportunities Office. Others have fully integrated their STC and other career focused programs such as Tech Prep to maximize the value of both efforts for a broad range of students. Adopting industry-recognized skill standards, skills

certification, and connecting STC to successful Tech Prep programs will facilitate students' transitions to work or higher levels of education.

- California Works!, located in the Yuba Community College District, employs the Work Ready Certificate program. This program offers certificates to students who meet stringent criteria; they must demonstrate an excellent attendance record, attain a minimum grade point average, and have experience participating in work-based learning activities such as internships and job shadowing. Employers who have partnered with California Works! recognize this certificate as additional documentation for employment applications. Many students in this LP also have opportunities to earn occupational health and safety certificates.
- The Sacramento Regional STC Alliance incorporates the California banking skill standards into their STC system. The banking standards are a joint project of the California Business Roundtable and the CDE. Educators and representatives from the banking industry have identified core skills necessary for all employees in the banking industry. They fall into three clusters: data and item processing, loan processing, and sales and service.
- The 21st Century LP is engaged in a comprehensive program with Cisco Systems that will provide students with the necessary technical skills for careers involving high technical standards. Through an innovative partnership with Napa Valley Unified School District, Cisco Systems is preparing students for the demands and enormous opportunities of the information industry while creating a qualified talent pool for building and maintaining education networks. Cisco is an exciting STC initiative that teaches students how to design, implement, and troubleshoot computer networks in four semesters. Students who complete the course will be prepared to take an industry recognized certification exam (Cisco Certified Network Associate–CCNA) and compete for jobs in the Information Technology field. The curriculum also provides a solid foundation for students who plan to continue their education at the college level in highly sought after technical disciplines.

Work-Based Learning

One of the key provisions of the STWOA that sets it apart from other school improvement efforts is the emphasis on work-based learning opportunities. Work-based learning opportunities include: work experience opportunities; job training and work experience coordinated with learning in school-based programs that are relevant to students' career major choices and lead to the award of skill certificates; instruction and activities in general workplace competencies; and broad instruction in all aspects of the industry (*STW Glossary of Terms,* 1996). Through STW, teachers also have the opportunity to learn directly from business and industry. Teachers participate in short-term work-based activities such as job shadowing, where they spend a limited time at the work place; or internships/externships where they spend an extended period of time, sometimes in paid positions.

California LPs are implementing STC strategies with a wide variety of work-related activities that reflect the diversity of their communities. Many of them are connected to other local programs, such as WIA, ROC/P, and Tech Prep, all of which have the goal of helping students learn about the real-life demands of the workplace. While providing more work-based opportunities, LPs are taking on a greater role in ensuring that these occur in a safe and legal learning environment.

A broad range of work-based STC activities

In the broad range of work-based STC activities implemented by LPs, students are able to develop their SCANS-based competencies, such as resource utilization, information skills, system skills, technological skills, and interpersonal skills. They are also able to clarify their educational and career goals and expectations.

- The San Francisco headquarters of Charles Schwab and Company, Inc. demonstrates a deep commitment to education through a series of comprehensive STC activities. Each summer, students spend approximately 150 hours in challenging part-time, paid work assignments receiving school credit, adding to the over 100 students who work as part-time STC associates year-round. The STC experience is seen as a springboard encouraging post-secondary education and career options for students. Over 150 teachers are encouraged to participate in shadowing, in-service training and externships to focus on high academic standards and expanded career skills. Additionally, the San Francisco headquarters leads the charge along with strategic business partners, such as Autodesk, Inc. and Bank of America, to work with key STC organizations in building a regional STC system.
- The LP in Marin has established a comprehensive program of internships in a variety of careers ranging from teaching to video production and law. Local newspapers have highlighted these internships as exemplary activities in school reform. This positive attention from the press enhances outreach and awareness of STC initiatives.

- The Sacramento Regional STC Alliance offers some powerful opportunities in the banking and financial services, retail and marketing, and technology industries. Eighteen students were selected for competitive internships at Bank of America and River City Bank. The River City Bank was so impressed by student abilities that they opted to offer paid internships instead of the original job shadowing opportunity arrangements. Also, sixteen students were placed in six-week summer internships in high tech companies such as Intel, Montgomery Watson, and Comcast.
- A General Motors (GM) project was created which falls within the Experience Education curriculum in the Santa Barbara STC Consortium. This is a special marketing program sponsored by GM and a local dealership. In 1999, fifteen students volunteered to participate in this project. They directly handled all aspects of a public relations campaign, i.e., budget, advertising, event coordination, etc. This cooperative education program clearly defines objectives for each student. The project allows for direct interaction with the employer and has an associate faculty member from the business department assigned to provide the work-based guidance and instruction.

Learning in a safe and legal work environment

As schools become a major contact point for connecting students to the workplace, they must assume new kinds of responsibilities for ensuring that students have a safe and legal learning environment. Among LPs that report details about how they are providing a safe working environment, there is evidence of many different approaches. Some strictly post information about legal requirements. Others actively seek to ensure that participants are well aware of their rights. Some have focused primarily on students and school personnel, while others have worked with students, educators, and employers.

- At the Northeastern California STC Consortium, staff expect to provide teacher training on child labor laws to more than 135 teachers by the end of the 2000 school year. Since teachers are the contact point for connecting students and employers, it is important that they are educated in what constitutes a safe and legal working environment.
- A more detailed example of educating stakeholders came from the Solano County Office of Education, which has taken several steps: (1) This LP developed a booklet on legal work environments and labor laws and made it available to local employers; (2) Local employer partners and representatives from the local community college presented a training program to assist prospective employers about legal issues pertaining to youth labor; and (3) Educators are currently revising curricula to include material about safe and healthy work environments within career pathways. The Solano LP strategy involves educating not only the students and teachers but also the employers themselves. This type of outreach will be helpful not only in providing a safe and legal environment, but in recruiting a sample of small businesses as well.
- The San Francisco LP provides legal information to employers, has arranged a resource to assist employers in designing appropriate internships, and also requires employers to sign insurance agreements to cover work-based learning opportunities.

- Finally, some LPs, such as the East San Gabriel Valley STC, institute requirements for employers to sign binding documents ensuring a safe and legal work environment. These are based in the agreements used in ROC/P programs in California. They hold the employer responsible for the safety of students.

Connecting/Linking Activities

Connecting both school-based learning and work-based learning is crucial to provide an overall contextual basis for learning and to ensure that STC activities do not occur in isolation. Students tend to learn more quickly when they are able to directly apply what they are learning in school to the work environment. Conversely, application of skills in the workplace illustrates the necessity of academic competence. Not all LPs directly reported on their methods for linking work-based learning and school-based learning components. LPs that reported on linking activities employ different strategies: hiring a teacher-employer liaison; engaging in teacher externships that expose teachers to the realities of work environments; educating business leaders through programs such as "Principal for a Day"; and involving teachers and the business community in curriculum development. Perhaps the most comprehensive strategy is the implementation of extensive projects that have been developed collaboratively with several stakeholders to incorporate both school-based learning and work-based learning.

- One school district within the Horizons LP in San Bernardino County hosts an annual Youth Forum where key leaders from the community gather to address all six career pathways at the secondary institutions. Student representatives from all high schools attend the forum and return to their schools to share information with their peers in their English classes.
- San Francisco STC helps to match work-based learning opportunities with high school and City College of San Francisco students through existing programs such as Travel & Tourism, Law Academy, Summer Training and Education Program (STEP), the Summer Youth Employment and Training Program (SYETP), and others. In 1999, 400 students were placed in paid internships and over 600 were placed in categorical programs' internships. STC has allowed these types of efforts to become centralized, even though they are accomplished through the collaboration of several different organizations. Furthermore, all pathways students are required to write and present reports discussing their work-based learning experience. They must identify what they have learned and assess how their experience improved their SCANS skills. Their employers receive copies of their reports and attend the presentations.
- The Kern County Partnership has instituted comprehensive community service that incorporates other programs to ensure a high level of connecting activities. These activities involve community members as part of the instructional team, foster civic responsibility, and make students active participants in their learning. The Hands-On Science and Technology Center (HOST) teaches science principles to elementary, junior high, high school and adult audiences. Students connect theory with solving real physics and science problems. The curriculum connects science with engineers to work

with students. The Kern County Partnership applies the HOST model in the Museum Project, which trains students as museum tour guides. Students are involved in every aspect of the museum project planning and implementation.

- The Workforce Silicon Valley LP worked with the Multimedia Learning Collaborative to refine a web site multimedia project for work-based learning. The project-based assignments are evaluated by industry partners, providing direct feedback to the classrooms.

Support for stakeholder involvement

Creating and maintaining a high level of stakeholder involvement is one of the greatest challenges facing LPs. Employers, labor organizations, and public and private agencies must understand the value of the STC enterprise and encounter no more than minimal obstacles to participation. Even among organizations and agencies that endorse the concept of STC, participation hinges on excellent and ongoing communication with school personnel. In schools, as well, teachers, counselors, and other staff members need information about how STC activities will directly affect students. And they require professional development to carry out their supporting roles.

Across the state, LPs are engaged in a wide variety of connecting activities aimed at creating and supporting high levels of school and community participation in the STC effort. For the most part, these involve establishing liaisons between schools and employers, providing professional development for school staff, and linking all of the key stakeholders to collaboratively plan and/or develop curricula.

- Throughout Orange County there are various STC-related efforts such as Tech Prep, four ROC/Ps, approximately 80 high schools with independent programs, 60 chapters of Future Scientists and Engineers, about 70 schools partnering with Junior Achievement, and over 1,700 local school-business LPs. Between 500 and 600 notices are sent out monthly to notify all stakeholders of Orange County Coalition/Vision 20/20 meetings. The emphasis of these meetings is collaboration among all stakeholders and between schools and businesses. Programs representing business, education, and community-based organizations are scheduled so that all participants become familiar with STC resources. Also, the meetings are held on a geographical rotational basis to garner as large and diverse an attendance as possible.
- Business Liaison consultants in Stanislaus County have continued to increase the number of effective school and business LPs participating in STC. Two consultants have been hired and oriented in Tuolumne County and are meeting regularly with educators. They also meet with local business/industry people to explain the role of business in STC, and to initiate new school and business LPs (Yosemite Community College District STC).

- The UNITE-LA LP has adopted the following philosophy: We always assume any plan, action, or idea we want to accomplish is already being done well by someone and/or some organization and therefore our first step is always to find . . . them and attempt to connect them to the "system". For example, UNITE-LA has been successful in attracting IBM to provide systems consulting expertise in developing a clearinghouse strategy. IBM has also contributed monetary donations and two personal computers.

Access For All Students

Because the STC effort aims to engage all students, LPs and schools face special challenges related to ensuring access for all groups. With the help of their community partners, educators are making special efforts to engage students who might otherwise be left out of learning experiences in the workplace or integrated career and college guidance activities. These include at-risk students, English Language Learners, and students with disabilities. LPs attempt to include all students by building on programs that already target specific groups, such as Tech Prep, and Adult and Alternative Education.

- Attention to "All Students" continues to be a focus for the Partnership for Tomorrow in San Joaquin County as they forge new avenues of assistance with a diverse population. There has been continued progress in the Alternative and Special Education setting with a Guidance Counseling Manual being completed by the Counseling Task Force. Other program possibilities are being explored to help individualize career goals for students in Alternative Education. A strong alliance has been developed with Special Education's Job Development/Job Coach Program, and a job shadowing program will involve this population. A very positive interaction has begun with the Southeast Asian community through the Lao Khmu Association. A creative plan for placing an intern, sponsored by the Lao Khmu Association, is being developed. The intern will work in the Partnership for Tomorrow office with responsibilities to do outreach in the Southeast Asian community.
- The North Coast STC Consortium has designed a comprehensive lab for all students. The lab is available for distance learning, access to a One Stop Center, and Internet access for high school and adult school students. The lab also targets special groups by including other at-risk populations. These include CalWORKS recipients, the EDD unemployed, minorities, pregnant and parenting teens, and post-secondary students. Computer literacy and training are provided for staff and students.
- The Long Beach STC Consortium has implemented systemic changes that are aimed at ensuring long term commitment to providing access for all students. They have combined the Youth Council branch of the PIC and the STC Governance Committee to form one central body: The Youth Governance Committee. In addition, the Long Beach STC Consortium attempts to include parent and student groups, special education representatives, probation representatives, the Neighborhood Resource Center, and the Chamber of Commerce.
- San Francisco STC actively identifies and recruits community-based organizations and programs that can provide resources for economically disadvantaged, limited English speaking, disabled, academically disadvantaged, and other at-risk youth. One of the key

resources SFSTC seeks in recruiting these partners is their experience in reaching, enrolling, and serving their constituencies. They have worked with Jobs for American Graduates (JAG) and collaborated in the preparation of the Youth Opportunities Grant (Workforce Investment Act) with Jobs for Youth.

- Due to the agricultural base of Riverside County LP desert communities, a large migrant population exists in the Eastern portion of Riverside County. The Riverside County Office of Education (RCOE) serves this population through the Migrant Education, Even Start, and Pace programs. Thirty students were offered individual tutoring, mentoring, and career counseling. Five students received the services of a bilingual teacher, which allowed two of the students to return to continuation school and receive their diplomas. Three students received GED preparation, and a bilingual teacher worked with the remaining students personally. All but two students graduated that June.

Summary of Qualitative Findings

Analyses of LPs' Performance Matrices, quarterly reports, and evaluation reports show that the state gave LPs considerable latitude in designing STC activities and strategies. Although it is difficult to discuss progress toward reaching specific goals based on these documents, or to draw inferences about the STC activity levels within or across LPs—including the number of schools, students, teachers, and businesses involved or the number of hours devoted to the activities—these data provide a rich, qualitative description of LPs' efforts related to four areas of STC: school-based learning, connecting activities, work-based learning, and access for all students. These data also informed the design of Phase II of the CA STC evaluation.

School-based activities

Data suggest that LPs are using a wide variety of school-based activities and strategies, including:

- career exploration and college awareness activities, which typically begin in the elementary grades and continue through high school. Activities range in length, intensity, breadth, and depth. Some LPs try to reach a high percentage of students at all grade levels by offering low-intensity activities such as a career fair, while others choose to concentrate their efforts on specific grade levels and offer more in-depth activities to fewer students;
- career counseling and guidance, where counselors provide guidance on career choice and opportunity rather than focusing almost exclusively on class scheduling;
- developing or revising curricula based on labor market information and employer input;
- teaching employability skills in the classroom, including SCANS-based skills that were developed with a board of business and industry representatives. A number of LPs are promoting the emphasis of SCANS skills by providing teacher training and the development of SCANS-based curricula;

- teaching technical skills in the classroom through the incorporation of industry-recognized technical standards into the curricula; and
- informing students, employers, and teachers about legal and safety requirements for the work environment. While some LPs post legal requirements, others offer in-depth training for teachers and employers.

Connecting activities

Available data about connecting activities conducted by LPs were limited. Data suggest that, as was the case with school-based learning, LPs are using a variety of different approaches to link work-based and school-based activities, including:

- creating direct links between employers and teachers by hiring a teacher-employer liaison or offering teachers opportunities to spend time in the workplace (teacher internships/externships); and
- offering business leaders the opportunity to work directly in schools through programs such as "Principal for a Day" or by helping with curriculum development.

Work-based learning

LPs often connect work-based learning opportunities to other local programs such as Tech Prep and ROC/P. Overall, qualitative data suggest that LPs are using a variety of approaches to help students learn about the real-life demands of the workplace.

As would be expected, the following work-based activities are common:

- internships,
- job shadowing, and
- community service.

To facilitate participation and support for work-based learning among employers, labor organizations, public and private agencies, teachers, counselors, and other staff members, LPs are:

- providing professional development for stakeholders; and
- hiring personnel to serve as liaisons between employers and schools.

Access for all students

In their efforts to provide access to STC for all students, LPs commonly build on programs that already target specific groups that serve a diverse group of students. Quarterly reports indicate that LPs are:

- coordinating efforts with programs such as Tech Prep and Jobs for Youth to recruit community partners and to find placements for work-based learning opportunities; and
- identifying and recruiting community-based organizations and programs that can provide resources for at-risk students, such as Jobs for American Graduates (JAG) and Jobs for Youth.

Stakeholder Participation: Early Quantitative Findings

The following is a discussion of the most recent, comparable quantitative data available on major STC implementation activities in California LPs and draws comparisons to national figures, where appropriate. It is based on data from the STW Local Partnership Survey (LPS) conducted in fall 1998 by Mathematica Policy Research, as reported in *The 1998 National Survey of Local STW Partnerships: Data Summary*. This discussion follows the general structure of the 1998 Mathematica LPS report, and readers are directed to Appendix E for a complete summary of data from the 1998 LPS.[18]

In the third of four national mail surveys, LPs across the country were asked about their organizational structure, implementation activities that were ongoing during the 1998-99 school year and, in some cases, about activities that were completed in 1997-98. Twenty-three of California's then 28 LPs responded to the survey, yielding a response rate of 82%.

Partnership Participants

The STWOA recommends that a wide array of education and other groups cooperate to meet community needs by establishing effective LPs. These groups typically fall into four broad categories: education institutions, training institutions, business and labor organizations, and other entities, such as workforce development boards, government agencies, and community-based organizations. To create a LP in California, the following partners are required: employers; LEA Representatives (elementary, middle, and secondary); post secondary representatives; local

[18] Lara Hulsey, Michelle Van Noy, and Marsha Silverberg, Mathematica Policy Research, Inc.,1998.

educators; organized labor; students; and parent organizations. Here is key information about LP participants.

- Education institutions most frequently act as lead organizations for California LPs, in 1998 representing 47.8% of the total. This is somewhat lower than the 56% of LPs nationwide that were led by an education agency or institution.
- A large number of California LPs (30.4%) were unwilling to designate a single lead organization when responding to the survey. This percentage is slightly higher than the 25% figure nationwide and suggests that in California there is a high level of organizational collaboration in partnership affairs.
- There is a very even distribution among high schools, middle schools, and elementary schools in their representation within California LPs. In 1998, there were 365 high schools in the 23 reporting LPs (an average of 15.9 per partnership), 338 middle schools (average = 14.7) and 310 elementary schools (average = 13.5).
- In the business and labor category, private sector firms had the largest representation in California's LPs by a very wide margin. In the 23 LPs that responded to the survey, membership included 1,172 private sector firms, 41 business/industry or trade associations, 56 Chambers of Commerce, and 47 labor unions. (However, organized labor was also represented by 22 registered apprenticeship agencies that were included in a separate category with 50 other training institutions.)
- Every California LP that responded to the LPS included at least one post-secondary institution, and many had more than one. On average across the 28 reporting LPs, there were 1.8 two-year post-secondary institutions and 1.5 four-year institutions. Given the fact that there are more two-year post secondary institutions than four-year institutions it would be expected that there would be a greater number of two-year institutions. These data suggest that relative to high schools, participation from two-year post secondary institutions has been less than representative.

Career Awareness and Development

The STWOA builds on other federal education initiatives by promoting career counseling and guidance to help students plan for their future education and career success. It establishes a progression of activities designed to help students meet their goals. The sequence begins with career awareness in the early grades and continues with career exploration and preparation as students move through middle and high school and into post-secondary education. In California and nationally, career awareness and development activities have been the leading edge of the growing STW movement.

- In 100% of California secondary schools, post-secondary institutions, and alternative education providers that reported on their career development activities in the LPS, educators were offering these services to students. (However, only 73.6% of secondary schools, 52% of middle schools, and 33.3% of alternative education providers reported this information on the survey. Schools that left this part of the survey blank were probably less likely to offer career development activities to students.)

- At the high school level, career interest inventories (54.3%), individual career counseling (52.8%), and activities integrated into academic and vocational classes (51.4%) were the most frequently offered components of a career development model. However, many schools also gave students scheduled access to career centers (47.4%) or to separate career awareness classes (39.8%); arranged career fairs (41.2%); or helped students develop individual career and educational plans (44.3%).
- Roughly one-third of post-secondary institutions in LPs offered the same array of career development activities as did secondary schools, with the exception of written individual student plans, which are less relevant for post-secondary students.

Promoting Student Access

Both the federal STWOA and California's plan for STC implementation stress the need for systemic change. STW is intended to be more than another targeted program that reaches only certain segments of the student population. The goal is for all students to receive broad exposure to the key elements of an STC approach: school-based learning, work-based learning, and connecting activities. To achieve wide student access requires that LPs and schools develop and implement program elements that are specifically designed to attract and succeed with hard-to-serve groups.

The LPS identifies eight special populations to assess the extent to which LPs and their member schools are implementing strategies to include diverse groups of students. These groups are minority students, English Language Learners, students with disabilities, students who are economically or educationally disadvantaged, pregnant or parenting students, out-of-school youth, students pursuing occupations that are nontraditional for their gender, and academically gifted and talented students. Like LPs nationwide, in California there is evidence that LPs are working to make STW activities available to a broad array of students by including them in decision-making and offering targeted services and programs. Although conclusive data are not available about the extent to which these special population participate in STC efforts, results of the LPS suggest the following:

- Depending on the particular student group, between one-quarter and one-third of California LPs require that representatives of these students serve on their governing boards.
- About one-half to two-thirds of California LPs offer funds for special activities related to the needs of these groups, depending on the particular student group.
- Between one-quarter and one-half of California LPs train members of the business community to work with members of these student groups.

- At the level of individual schools, the most popular methods of increasing access by all students are using targeted promotional materials (about 80% or more of schools, depending on the student group) and special career guidance (also about 80% or more of schools).

Career Majors

One of the unique elements of the STWOA is a focus on career majors—a strategy for organizing the high school curriculum around broad career areas or occupational clusters. In many respects, this emphasis on career-focused education is an outgrowth of earlier education reforms, such as the California Partnership Academies, that attempt to make education more relevant for students. In California and elsewhere, career majors take many shapes and forms. At one end of the spectrum are situations where counselors ask students to identify a career they want to plan for and to use that career goal as one element in selecting courses, particularly electives. At the other end of the spectrum are academies and magnet schools, where students, teachers, and courses are all organized around various career themes.

The LPS has started to identify the various definitions that LPs have in mind when they establish career majors, to determine the prevalence of these various types of career majors, and to show the prevalence of particular industry groupings within career major structures.

- In California, 100% of LPs responding to the survey include at least one school that offers some type of career major to high school students. This compares to only 80% of LPs nationwide.
- At the level of individual schools, however, only 52.3% of California high schools offer some type of career major, which is roughly equivalent to the percentage that do so across the country.
- Written course sequences that help students select their courses are the most common form of career majors in California.[19] Almost 96% of LPs have at least one school that has created these sequences, and they are available in 47.2% of high schools in the 23 California LPs. This compares to 76.9% of LPs and 46.6% of high schools nationwide.
- Less common both nationally and in California are schools that group some (36.1%) or all (2.8%) students by their area of career interest. Nearly 60% of California high schools in the 23 LPs do not cluster any students around a career major area, a percentage that is almost identical to the national figure.
- Like other parts of the nation, in California the two most frequent industry clusters for career majors are business/marketing/finance and engineering/industrial technology. However, the percentages of California schools offering these career majors are somewhat lower than the figures are nationally: 28.7% versus about 40% for

[19] Written Course Sequences are required courses to complete a career major, established to help students make course selections, and are the most common form of career-focused education in California.

business/marketing finance and 27.3% versus 33% for engineering/industrial technology.

- Despite the relatively high percentages of California LPs that offer some type of career major program in at least one high school, the actual numbers of students who select a career major is small. As a percentage of 12th graders, slightly less that 6% had selected a career major by the time they were in their final year of high school. This was about half the national figure of 11.7%. In addition, only 42.3% of California high schools responding to the LPS were able to report on the number of students selecting career majors. This could suggest that the actual representation of students with career majors is even less than 6%. Alternatively, the discrepancy between the percentage of students in California who reportedly have a career major (6%) and the national figure (11.7%) could suggest fragmented data collection and reporting systems.

Curriculum Integration

Similar to career majors, the concept of curriculum integration is also open to a wide variety of interpretations. Over more than a decade, school administrators, curriculum specialists, teachers, and education strategists have defined and implemented integration in many ways. They have changed course content within individual classrooms; made structural changes in whole schools (like career academies, career clusters, or magnet schools); introduced new instructional or pedagogical approaches (like integrated projects or group work); and connected classroom work to activities in the workplace.

- In both California (56% of secondary schools) and the nation (60.1%), the most common approach to integration is developing applied units or projects within the school.
- In California high schools, there is a rapid drop-off when it comes to the prevalence of other integration strategies. Only about one-quarter to one-third of high schools use approaches such as teaching all aspects of various industries, purchasing commercial applied academics packages, using state-developed applied curriculum materials, academic-vocational team teaching, or teacher collaboration in groups to develop career-related curriculum units. At the national level, the prevalence of several of these integration practices ranges between 40% and almost 50% of high schools.
- Schools can also pursue curriculum integration through collaborations involving secondary schools, post-secondary faculty, and employer or labor representatives. In California, 29.3% of high schools indicated that their teachers collaborate with college faculty on new or revised curricula, while that figure is only 26% nationally. On the other hand, only 23.9% of California high schools collaborate with employers on curricula for classrooms or work sites, while 32.5% do so nationally.

Secondary/Post-Secondary Partnerships

Helping students identify their career goals, understand the importance of education or training after high school, and prepare for further education are some of the most important goals of STW

efforts. One of the key strategies for schools to achieve these goals is for secondary schools and post-secondary institutions to develop strong connections. Information sharing, various types of collaboration around curricula and standards, and administrative structures that facilitate the transition from high school to post-secondary education are some of the most frequent types of connections between secondary and post-secondary schools.

- Overall, the strategies that California uses to link high schools and post-secondary institutions (e.g., articulation agreements, collaboration around standards) are similar to the rest of the nation.
- Sharing employer networks and contacts (48.9% of high schools in California and 46.9% across the country) is the most common type of collaboration. This is closely followed by sharing labor market information (48.6% and 47.3%, respectively).
- In terms of administrative structures, agreements allowing students to have dual enrollment at their high school and a college, as well as articulation agreements granting advanced college standing for high school work, are very popular in California and elsewhere. Close to half of California high schools (48%) permit dual enrollment, and almost 60% have secondary/post-secondary articulation agreements between secondary and post-secondary schools that grant advanced standing.
- The least frequently used strategy for helping students advance to college work is granting college credit for high school work-based learning. Only 13.3% of California post-secondary institutions and 19.7% of institutions nationwide grant this type of credit.

Work-Based Learning

Work-based learning is one of the cornerstones of the STWOA and California's STC initiative. It is a mechanism for helping students see the connection between classroom learning and future careers and a vehicle for helping them learn about career alternatives. There is wide variation in the types of activities that schools have developed to give students exposure to the workplace. These range from short-term exposure to various jobs and industries—through work site tours or brief job-shadows—to intensive activities that give students a more thorough understanding of a career area and may actually help them develop some job skills. Long-term internships and paid employment that is connected to a career major are examples of these intensive activities.

- Among individual LP high schools, only work site visits and job-shadows have captured widespread attention as part of the curriculum. Almost 43% of high schools offer these low-intensity opportunities, while percentages for other activities range from 9.9% (assignment to a workplace mentor) to 31.8% (unpaid internships during the school year). Nationally, it is also the case that low-intensity activities are most prevalent.

- The LPS identified four types of work-based learning that can be connected to career majors: paid school-year jobs, unpaid internships or jobs during the school year, paid summer jobs, and unpaid summer internships or jobs. For all of these, California has a much higher percentage of LPs where at least one high school offers the activity. However, while more California high schools offer unpaid learning opportunities and paid summer jobs than schools elsewhere, fewer provide paid jobs during the school year.

Summary of Quantitative Findings

Survey data provide a picture of STC during the early stages of California's implementation of STWOA, and allow some comparisons to data at the national level. Major findings from the LPS are summarized below.

- Almost one-half (47.8%) of LPs are led by education institutions, but data suggest that almost one-third (30.4%) are led by more than one type of organization, indicating a high level of collaboration between different groups within LPs.
- There is a fairly even distribution of high schools, middle schools, and elementary schools in LPs, and every responding LP included at least one post-secondary institution.
- Private sector firms have a much higher level of participation in LPs than trade organizations, labor unions, or Chambers of Commerce.
- With regard to career awareness and development, career inventories, individual career counseling, and activities integrated into academic and vocational classes were the most frequently reported STC components at the high school level. Approximately one-third of post-secondary institutions also offered these activities.
- LPs are promoting access to all students by using a variety of strategies, including: requiring that representatives of targeted groups (e.g., English Language Learners; students with disabilities) serve on their governing boards; offering funds for special activities related to the needs of these groups; training individuals from the business community; and using targeted promotional materials and special career guidance.
- LPs are using a variety of strategies to focus high school students on career majors. The most common approach to career majors in California involves providing students with written course sequences to help them make course selections. Far fewer schools group students by their area of career interest. Data indicate that less than 6% of high school seniors in California LPs had selected a career major.
- Collaboration between secondary and post-secondary institutions most commonly involves sharing employer networks and contacts (48.9%) or sharing labor market information (48.6%). Moreover, close to half of California high schools allow students dual enrollment in high school and college.
- With regard to work-based learning, the most prevalent activities in high schools in California LPs include work site visits and job shadowing (about 43%). High intensity activities such as workplace mentoring and unpaid internships are offered far less frequently (in approximately 10% and 32% of high schools, respectively).

Local Partnership Sustainability Efforts

As LPs reach the final stages of federal funding, STC related strategies become a much greater concern. Many sustainability efforts defined by LPs are closely connected, or even identical, to the STC implementation activities these same LPs report. In their reports to the state, LP leaders group sustainability efforts in the following ways:

- recruiting partners and local business;
- connections with community-based organizations;
- linkages to post-secondary institutions;
- communication strategies to gain support from various stakeholders;
- regional media collaboratives;
- professional development of stakeholders; and
- capacity building.

Pursuit of these sustainability activities does not assure a sustainable STC system. However, they are recognized as strategies that help LPs individually and collectively support sustainability.

Recruiting Partners and Local Business

The sustainability of an STC system depends heavily on the recruitment of representatives from key stakeholder groups and, more importantly, on effective collaboration among them. These stakeholders should include local businesses, community-based organizations, post-secondary institutions, and parents. Nurturing these relationships takes extensive time and communication so that all see the rewards and positive outcomes of STC both for themselves and for the students.

Significant involvement from local employers is especially essential for many aspects of the STC effort, especially for curriculum planning, work-based learning activities, and career guidance. Since local businesses are in the prime position to relate the expectations and demands of the workplace to educators and to schools. In recruiting businesses, LPs need to encourage long-term commitments from local businesses as opposed to participation in one-time activities.

Many LPs discussed the opportunities businesses provide for internships, job-shadows and other work related activities. However, few LPs reported long-term resource and/or financial commitments from businesses. For this reason, it is unclear to what extent work-based learning

opportunities will be available to students after the federal funds to the state are fully expended. Providing the resources, in terms of both staffing and finance, for continually active contact with the industry will be a challenge for all LPs. However, sustainability will only be realized through a focus on long-term commitments, not short-term buy-in.

- San Francisco STC has made efforts to secure resource commitments from employers and translate general support agreements into work-based learning opportunities in pathway occupational areas. Between 500 and 700 specific employer commitments were made in 1999, and about 300 work-based learning opportunities were generated to support the LP's summer internship program.
- The Orange County Coalition/Vision 20/20 specifically recruited the Executive Director of the Orange County Central Labor Union to serve on its Board of Directors.
- The Monterey Bay Regional LP has involved various agencies and business in implementing and promoting STC initiatives. Business and industry partners include the Business/Education Alliance of Monterey Bay (BEAM), the Business/Education Student Transitions (BEST) and the Your Future is Our Business collaborative. Your Future is Our Business maintains a database of over 600 businesses that agree to provide various levels of work-based learning opportunities to students and staff; BEST maintains a similar database of over 400 employers. This coordination will be beneficial in sustainability if the Monterey LP can provide continued access and encourage students to use these available databases.

Connections with Community-Based Organizations

Community-based organizations can offer a strong support system for STC concepts and practices within a community. At the same time, STC has the unique opportunity of bringing together community-based organizations with schools and other community partners who share their interest in youth development. For example, collaboration between Chambers of Commerce and County Education Offices helps students find quality internship opportunities and introduces them to careers and employment opportunities in their local areas. Among other important organizations included in these collaborations are Private Industry Councils, Offices of the Employment Development Department, Parent Teacher Associations, Minority Councils, and Workforce Development Councils.

- At California Works! the Working for Interagency Solutions (WINS, a six-county partnership) Committee held a summit. Attendees included several community-based organizations, such as the Yuba-Sutter Head Start Program, Girl Scouts, Boy Scouts of America, Sutter County Library, CTEC (One-Stop), Private Industry Council, Alliance for Hispanic Advancement, Department of Rehabilitation, Migrant Education, California Human Development Corp., and Friday Night Live (part of California Works!). The meeting not only provided attendees with information about STC, but the attendees had the opportunity to share information about their services with each other and discuss ways in which interested agencies can work together by sharing information, ideas, and resources. The director of the Tri-County ROP made a presentation addressing the role of ROP in STC; a representative from Friday Night Live discussed the critical need to incorporate mentors into the lives of students; the Freemont-Rideout Health Group also made a presentation highlighting hiring trends in the health industry; and a panel with representatives from various personnel agencies discussed the skills employers within the community are seeking in potential employees.
- The Ventura County STC Network is working with the community and GTE to provide STC opportunities. The GTE Community Connection is a program that targets soon-to-be emancipated foster children to help place them into appropriate internships and assign them a mentor within GTE. In another joint effort, Ventura County STC Network is producing a video documentary to feature the Fillmore High School Construction Career Pathway and its linkage to the Habitat for Humanity project in Piru, California. The production of this video features linkages with the Ventura Adult Education Technology Development Center, Columbia Broadcasting System (CBS), Ventura County STC Network, Association of General Contractors of California, Fillmore Unified School District, and Habitat for Humanity.
- The El Dorado County JOB ONE LP has formed strong working relations with several Chambers of Commerce. These include three Western Slope Chambers of Commerce and the County Chamber of Commerce. The El Dorado Chamber of Commerce committed to "Expo 2000," combining a job fair and business exposition. By aligning with several community-based organizations, the El Dorado LP is able to expand their exposure and increase support for STC activities.

Linkages to Post-Secondary Institutions

Creating strong linkages with post-secondary institutions (PSIs) is critical for promoting the value of higher education and academic skills and maintaining pathways to higher education for students participating in STC. The types of resources available to PSIs, and the important role they play in the local community as an institution, make them key partners in efforts to sustain STC. Post-secondary institutions offer a rich variety of benefits to STC. In the most immediate sense, linkages with PSIs ensure the continuation of students' pathways, guarantee recognition of students' acquired skills and certificates, and enrich career and education awareness activities through their participation.

LPs are pursuing two main strategies for making connections with post-secondary institutions: building on linkages established by existing vocational and academic programs, such as Tech Prep and ROP, and creating new articulation agreements between LP schools and PSIs.

- The Santa Barbara High School (SBHS) ROP automotive and business courses are articulated with Santa Barbara City College (SBCC) classes, and students can receive concurrent enrollment credits. Students are eligible to take the SBCC on-line Careers Exploration Class, Personal Development 191A, as well as register for concurrent SBCC credit when taking the Work Experience Class or Advanced Placement English at SBHS (Santa Barbara STC Consortium).
- The Paramount Unified School District in the Los Angeles Youth Development Partnership has developed strong links with Cerritos College. A course outline has been developed for a networking class—basic courses will be taught at the high school with advanced courses being taught at Cerritos. Students may elect high school or college credit; completion of the program leads to certification.
- Temple City Unified School District, also in the Youth Development Partnership, is part of a new Tech Prep grant with Pasadena College that focuses on Computer Information Systems. In addition, all tenth grade students and their families were invited for private counseling sessions to identify career and future plans after graduation and to develop a four-year plan for reaching their goals.

Communication Strategies to Gain Support From Various Stakeholders

LPs are employing several tools to communicate the success of STC and to gain support from stakeholders. A wide variety of activities occur here, from informational newsletters and videos to advertising, to including stakeholder collaboration in communication products. Special efforts are made to target adult, special education and alternative education schools. The challenge will be for LPs to continue to utilize these tools to maintain the interest generated for STC, maintain and increase school-based and work-based learning activities, and garner external contributions once federal funds end.

- In the Long Beach STC Consortium, a project involving the Port of Long Beach was taped by CBS and aired in June of 1999. This type of involvement creates positive exposure for LPs and businesses.
- Within the Santa Barbara STC Consortium, the Santa Ynez STC agency commissioned an STC awareness video. This video underwent extensive review by an Ad Hoc committee and the Advisory Council. Advisory Council members will use the informational video to inform and recruit the local community (parents, businesses, or local organizations) as partners in the Santa Ynez STC agency.
- At California Works! the general brochure and Work-Ready Certificate were translated into Spanish and Punjabi by the Migrant Education office. The translations were an in-kind contribution to the LP. The translations will be formatted and distributed to students and parents within the community. In addition, a presentation was developed that focuses on providing employers with information on STC and recruiting business participation.
- The Monterey Bay Regional Partnership is using positive evaluative results to promote STC initiatives. The LP has developed and implemented a longitudinal study encompassing all 11th and 12th graders in the two county area. The information has been disseminated to individual schools and to the business community through their Project Board. They are moving into Phase Two of a four-year study. Much of the information gathered confirms that students are eager for more career information and training, and see STC activities as encouraging them to continue their education.
- Some LPs are targeting all students by providing information in different languages and to specifically targeted groups. The Verdugo STC Coalition has completed brochures in English, Spanish, Armenian, and Korean. The coalition have also attended five separate Welfare to Work meetings to include this population.

Regional Media Collaboratives

Regional Media Collaboratives are able to work with a variety of districts to promote best practices. One of the main Regional Collaboratives that has a strong media component is BaySCAN. BaySCAN is able to promote STC activities for the LPs through relationships with KPIX Channel 5. In addition, the promotion of activities such as those found at Charles Schwab, provide high profile exposure.

Professional Development of Stakeholders

Effective professional development for all stakeholders in the STC system is essential for the long-term survival of these school improvement efforts. As California LPs are looking to the future, they are investing in professional development activities using a wide variety of approaches.

- In 1999, the Butte County STC Consortium hosted a "School to Careers Summer Internship" for educators. Twenty-six businesses hosted eighteen educators representing the entire county and grade levels one through fourteen. "The workshops provided teachers with SCANS, NCDG (National Career Development Guide), work-based and school-based STC activities, curriculum integration training, and business and student guest speakers. Interns were also required to document daily examples of SCANS being demonstrated at their work site, conduct a business informational interview, write an internship summary, prepare a lesson plan utilizing their internship training and expertise, and identify a mini-grant focus for their school."
- Eight staff development workshops were offered by the East San Gabriel Valley LP, covering a range of implementation issues and concepts. Topics included integrating curriculum, guidance and counseling strategies, non-traditional occupations, "how to" products and guidebooks, portfolio assessment, articulation, comprehensive reform, and job shadowing.
- During the summer of 1999, teachers were given the opportunity to job-shadow a professional in a business outside of the education field at the Partnership for Tomorrow. The weeklong experience was arranged by a Partnership for Tomorrow liaison working with community businesses that are partners in the STC program. The various business participants included law enforcement agencies, hospitals, newspapers, and agri-business.
- The Solano County STC program has established a unique professional development program for its teachers. They have developed a creative "Teachers in the Workplace" training course whereby county teachers are provided release time to participate in hands-on, intern-like work experiences. Local companies such as Clorox and ALZA Corporation developed the curriculum and job training focus. In addition, these companies paid each teacher a salary during their internship and developed a detailed exit interview process to capture lessons learned for future work opportunities.
- The Solano County STC program also offered professional development in the form of "Principal for a Day." This program gives the business community the opportunity to

experience the school setting and facilities, as well as participate in a dialogue regarding the development of curriculum influenced by the realities of the business and industry environment. Over 50 business leaders have participated.

Capacity Building

In order to implement, support, and sustain STC efforts, LPs are involved in the following categories of activities.

Construct sustainable databases

Several LPs are taking advantage of technology to promote their STC initiatives and to provide timely and relevant data. Some LPs have installed new computers and software for STC initiatives, while others build on existing databases such as those used for Tech Prep or the EDD. Databases are made available with directories of employers and available work-based positions. In some cases the databases are a direct listing of employers offering job or internship opportunities. In other cases, the databases are interactive tools with links to several other sites such as the COC and local community colleges and universities. These provide informational links with K-16 for students, teachers, employers, and administrators. Although implementing databases is an effective analytical tool, maintaining these databases after federal funding terminates will be a major concern for sustainability.

- The Riverside County Economic Development Agency (EDA) has made available to the public an integrated database for employment, training, and work-based learning sites via One-Stop's kiosks placed countywide. In addition, their ERISS web site link provides access from any Internet-ready computer terminal to a database of over 12,500 businesses in the Inland Empire. The database includes a wealth of information resources including up-to-date job lists, employer profiles, hiring practices, and education requirements for position openings. To date, over 15 kiosks have been placed in easily accessible locations throughout Riverside County.
- Linking Education and Economic Development (LEED, Sacramento) is investing in equipment and software to increase the efficiency and effectiveness of the LEED Information Network Collaborative (LINC). LINC serves as the regional connecting activities system and is used to facilitate the work of Industry Education coordinators.
- San Luis Obispo Chamber of Commerce and the Education to Career Connection collaborated on an Internet electronic database for businesses to provide work-based learning opportunities to educators and students. The web site is accessible from the Chamber Home Page. The LP selected New Image Technologies from among bidders to develop the "education2career.com" web site. This site will be accessible from the San Luis Obispo County Office of Education's home page and will link to the Chamber site.
- Vision 20/20 has made efforts to make curriculum information available across the county electronically. The Vision 20/20 web site will provide electronic access to

instructional materials produced by educators who participated in paid summer internship/material development opportunities. Over 200 requests for materials had been processed at the start of 1999.

Link to other programs

Another effective means of sustaining STC is building alliances with other programs currently implementing similar concepts. Programs such as the Regional Occupation Program (ROP), career pathways, and career clusters already incorporate curricula that offer applied learning in career majors or a general career field. WIA and Tech Prep programs offer a significant base for including at-risk populations, for supporting secondary to post-secondary linkages, and for apprenticeship funding programs. LPs may draw from WIA and Perkins III funding to continue implementing STC activities and can also partner with Private Industry Councils (PIC) that were originally funded under JTPA. These councils provide insight on local industry and have been active in collaboration of STC initiatives. Also, coordination with Tech Prep facilitates the creation of career majors in schools, and Tech Prep programs have already established recognized skills certificates.

- EASTBAY Learns has partnered with several community organizations for program support and alternative funding. The Contra Costa County Office of Education has committed to a full time STC coordinator. Several school districts took advantage of funding for after school and mentoring programs. A Health Careers Learning Collaborative will be implemented through foundation funding. JTPA funds have been secured for STW related activities. EASTBAY Learns also capitalized on Regional Workforce Preparation and Economic Development Act funds for various STC programs.
- The San Francisco LP has helped to integrate two programs from its school district that serve at-risk and low-income youth. The Summer Training and Education Program (STEP) and the Summer Youth Employment and Training Program (SYETP) both have experience with developing and implementing STC concepts. They have strong employer connections and support services that increase at-risk students' opportunities to participate in work-based learning activities.
- The collaboration between Lynwood Unified School District and WIA/Hub Cities Consortium resulted in placing approximately 250 middle and high school students in summer employment within the district/community of the Greater Los Angeles County LP. In addition, the Youth Corps of the Southeast Lost Angeles County Private Industry Council (SELACO PIC) offers opportunities to disenfranchised youth. Youth are exposed to many career options and training opportunities for meaningful and gainful employment. The Youth Corps has a fully operating job club equipped with computers with Internet access, job search resources, daily newspapers, and other resources that facilitate effective job search activities.

Accountability/evaluation

The concept of accountability/evaluation differs slightly from other activities to sustain STC systems. Although accountability/evaluation is not a direct means of sustaining STC, it forms an essential base for sustainability through research in two ways. LPs can use research to evaluate the effectiveness of their implementation strategies.

Second, assuming favorable evaluations finding, LPs can use those findings to justify the value of an STC system to all stakeholders and to leverage resources to support the initiative.

- Horizons LP employs the California Education Research Cooperative (CERC) to evaluate its STC system, with the goal of increasing chances of support among educators. Their evaluation plan included case studies in contextual and problem-based learning in order to demonstrate to educators that applied and contextual/integrated learning can increase student achievement and raise test scores.
- Sierra Regional LP has contracted external evaluators to track program and student performance. The evaluation plan was aimed at: identifying focus areas to measure program performance, identifying data-collection sources and methodologies, and describing a performance model for analyzing process, outcome and continuous improvement. The evaluation helps build a solid foundation for sustainability by placing performance measures in place and formulating areas of responsibility for specific stakeholders. One of the recommendations for sustainability was to improve participation by the administrators at the Site Team level (pg. 15). Administrators are encouraged to meet and communicate directly with the Site Team on a regular basis.

Leveraged funding

Businesses, community-based organizations, post-secondary programs, and other programs closely linked to STC may be important sources for alternative funding, both in the near future and in the long term. Some LPs have received in-kind and matching contributions as initial investments. Others are building on existing programs to capitalize on alternative funding. The financial viability of STC will, in large part, depend on LPs' capacity to gain resource commitments from stakeholders to maintain relationships between schools, students, businesses, parents, and the community. Sustainability of STC through alternative funding sources will necessitate the formation of permanent links between education, businesses, and the community.

- In Kern County, they have expanded their Texaco Summer Externship program primarily with commitments from Texaco. "Texaco hires interns every summer . . . This summer STC will pay for three teachers to develop school-based curriculum and activities to correspond to work-based learning. Texaco pays $189,750, while STC contributes only $14,919."
- The Long Beach STC Consortium has created a variety of funding arrangements to coordinate funding between STC and partners such as the Youth Job Start Center. The

Long Beach School District, for example, will independently fund one of the STC coordinator positions during the fourth year of implementation.

- Charles Schwab & Company, Inc. is a leader among U.S. companies in STC and workforce development. Through the company's foundation, over $500,000 in education grants and employee matching funds are donated to local schools (kindergarten through post-secondary) and education-related initiatives each year. The company has established STC managers, and they set a goal to have over 500 students doing meaningful work in the company by the end of 1999. Charles Schwab's commitment focuses on strategic educational LPs, technical assistance, and innovative workforce development practices.
- The EASTBAY Learns Partnership has been successful in obtaining alternative funding from local industries and agencies, as well as building on existing programs for financial support.
- The Contra Costa County Office of Education has committed funds for a full-time STC Coordinator well into the 21st Century. Foundation funding was secured to establish and coordinate an East Bay Health Careers Learning Collaborative that will supplement the four existing Learning Collaboratives coordinated by BaySCAN. All of their work directly relates to sustainability of STC in the Bay Area. These funds are available to pay students for internships connected to STC. Combined funding from the four Private Industry Councils (PICs) exceeds $300,000. Several schools, community colleges, and regional occupational programs are using Tech Prep, Perkins and Workability funds to further STC. Regional Workforce Preparation & Economic Development Act funds continue to support Business-Education liaisons and PathFinder development in the East Bay, as well as inter-segmental Information Technology curriculum development.

Summary of Local Partnership Sustainability Efforts

In quarterly reports to the state, LPs described a variety of strategies for sustaining STC efforts. These strategies are listed below. It bears repeating that in many instances, activities that LPs identify as "sustainability efforts" are identical to STC implementation activities.

- Recruiting representatives from key stakeholder groups (including local businesses, community-based organizations, and post-secondary institutions) to assist in curriculum planning, to organize and support work-based learning, and to provide career guidance.
- Creating effective systems for communication and collaboration between stakeholders.
- Securing ongoing resources and long-time commitments from local employers, particularly work-based opportunities, as well as finding alternative funding sources.
- Working with post-secondary institutions to ensure the continuation of students' pathways, to guarantee recognition of students' acquired skills and certificates, and to enrich awareness activities. LPs have strengthened connections with post-secondary institutions by creating articulation agreements that allow concurrent high school and college credit and by developing sequences of courses that begin at the high school level and continue at the post-secondary institution.
- Some LPs have used data collected through local evaluations to show the community the positive impact of STC and justify the value of investing in STC efforts.
- Providing professional development for stakeholders about the goals and strategies of STC, appropriate curriculum and instructional techniques, and administrative aspects of STC management such as grant writing. LPs have provided professional development opportunities to teachers, administrators, and the business community.
- Creating databases with directories of employers and available work-based positions, as well as interactive links to other career-related sites or other educational institutions.
- Collaborating with other career-related programs, such as ROP/C, Tech Prep, and JTPA.

What is Known about Existing Evaluation Data

We now have large amounts of data about STC in California (see Section III). However, they are based on few common measures or reporting formats; are primarily qualitative; and focus on processes/plans implemented by LPs rather than student outcomes. Given that LPs are, for the most part, building systems and programs, collecting these data is appropriate. However, at present, data about STC in California do not provide information that is of highest interest to funders and the Legislature (i.e., student performance data). Nor do they allow us to answer most key research questions as listed in California's RFP. The specific findings about existing data on California's STC efforts to date are described below.

STC's Diversity of Implementation in California

As described in Section III, STC in California is notable for the diversity of approaches to implementation at the local level. This diversity of implementation influences the nature and level of STC impact. Where students participate in regular, intense, multi-year STC activities (i.e., in career paths and academies) we might reasonably expect to see meaningful changes in test scores, GPAs, and attendance that could result from the STC intervention. However, where STC implementation is sporadic and primarily focused on career awareness, as is often the case, it is not reasonable to expect meaningful changes in traditional student performance measures such as scores from standardized achievement tests. Moreover, STC in California and at the national level often does not directly target traditional student performance measures. Instead, STC efforts intend to increase students' capacity to make informed choices about secondary and post-secondary education, and employment. Consequently, measuring the full impact of STC (on students, teachers, employers, and systems) requires both attitudinal[20] and performance measures. And, the performance measures targeted for evaluation must be appropriate to STC goals and scope of intervention efforts.

[20] Attitudinal data can be collected through surveys, interviews and focus groups and might include questions related to employers', and teachers' beliefs about the value of STC, student's beliefs about their future career plans, etc.

California's Student Performance Databases

On a statewide basis, California maintains school-level, not student-level, data about student performance. For example, because of privacy requirements, data are available on how well a given school performed on a standardized test but not on how individual students in that school performed. Even if we can make meaningful distinctions among students in terms of their levels of STC participation, it would be difficult to obtain and analyze statewide student performance data to correlate with STC exposure.

State Evaluation Requirements for LPs

In recognition of the great diversity in implementation approaches, the state developed reporting formats that allow LP self-evaluations to focus primarily on completion of implementation plans rather than on STC impact. Furthermore, there is a lack of common understanding of STC-related concepts and vocabulary for LPs. This is evidenced in the LP plans, in which different LPs list similar STC activities under different goals. This lack of common concepts and vocabulary exacerbates evaluation difficulties associated with a lack of common measures across LPs.

Available Quantitative Data

The Progress Measures Survey and LPS provide quantitative data from a substantial number of LPs. However, these data focus on STC activities and participation, not student performance. From these data we know, in broad terms, what STC opportunities are being offered to whom, and who is participating in LP governance activities. As yet, we do not have survey data available for some of the newer LPs. For example, there are now 59 LPs in California. In 1997-98 there were 28 LPs, 23 of which responded to the LPS. Also, while a small minority of independent LP evaluations address student and other impacts quantitatively, they generally did not use common data-gathering instruments, and measures, and did not administer the instruments in the same way at the same time.

Finally, California's response rate to STW-related surveys is notably low. Specifically, California's response rate on the 1998-99 Progress Measures Survey is 53.3%, with only 24 of 45 LPs responding. Only four other states out of the 45 participating states have lower response rates. Moreover, of these four states, one is not structured to report by partnership, two no longer receive federal STW funding, and one has returned 100% of data from the state level, but only

40% of information at the partnership level. We have been unable to identify any structural, fiscal, or other reasons for California's poor survey response rates.

Lack of Specificity About Depth and Quality of STC Activities

Available data on STC implementation in California lack specificity with respect to either quality or intensity of STC activities. Some LPs have chosen to focus on intensity—to ensure that students receive sustained, comprehensive STC exposure. Many others decided to emphasize broad coverage. They gave small amounts of funding to a large number of schools to implement a variety of one-time and less complex activities. With the exception of Progress Measures and LPS data, we do not know, on any consistent basis, how *deeply* activities were implemented or the *quality* of the activities. Nor are there commonly held definitions of what constitutes the *depth* or *quality* of activities. Additionally, we do not know about the *impact* of activities on their target audiences. One of our major data sources is the set of quarterly reports submitted to the state by LPs. These reports are almost entirely descriptive and lack information on the scope or depth of activities. For example, in its quarterly report, one LP stated that it implemented a "mini-grant process to provide incentives to teachers to develop innovative projects." Lacking is consistent information on numbers of grants awarded, numbers of projects, and numbers of students involved. Another LP cited an activity designed to "increase awareness of and provide resources to school sites about work-based activities." While these LP reports tell us that an activity occurred, we cannot make meaningful inferences beyond that occurrence.

Existing Data and the Research Questions

The research questions posed in the STC evaluation RFP address sustainability and student preparation for post-secondary education and career entry. Regarding sustainability, no standard, *measurable* definition currently exists against which LPs have provided data. Similarly, we do not have reliable data about individual students that allow for meaningful statistics or inferences about student preparation for post-secondary education and career entry. However, efforts are underway to establish a standard definition of sustainability and student data will be collected during Phase II of this evaluation.

What is Known about STC Implementation

While existing data have important limitations, particularly with respect to STC impact and student outcomes, meaningful information on STC process and implementation can be gleaned from them. Here is a summary of the key findings regarding STC process and implementation.

1. *Diversity and richness of activities are salient features of California's STC context. Like the rest of the nation, California's approaches to STC vary widely.* Consistent with the STWOA, diversity starts with LP governance and overarching implementation strategies, and includes both school-based and work-based activities. For example, at the governance level, educational organizations lead almost half of California LPs. Some LPs ensured that employers comprised the majority of decision-makers and that employer concerns were the first point of reference in determining LP activities. However, 30% of LPs were unwilling to designate a single lead organization. This suggests that a wide range of organizations play important roles in LP governance. Regarding school-based activities, some LPs and/or schools emphasized simple, one-time career awareness events, such as career days or guest speakers. Other LPs emphasized intense, often comprehensive school-based experiences, such as integrated curriculum. California's diversity of STC approaches makes sense for this large state—STC was designed to be broad and to align with other education reforms (e.g., standards-based reform, community service, block scheduling).
2. *Ideally, STC's reach extends from kindergarten to college, across all career-technical and academic disciplines, and into the workplace.* Such a broad-based reform that targets all K-16 students in and out of the workplace must be highly flexible, particularly in its nascent stages. California's approach to STC implementation recognizes and supports local control. The state mandated that LPs must achieve certain loosely defined goals but let LPs have wide latitude about how, and to what level, those goals would be achieved. Also, as will be discussed in depth, the state gave LPs great latitude in how to carry out evaluations.
3. *STC implementation occurs amidst, and often in concert with, other reforms (e.g., WASC Focus on Learning, site-based management, higher academic standards, Success for All) that may have an impact on student performance outcomes and attitudes.* Intensity of STC implementation often occurs at levels where it is not possible to meaningfully distinguish its impact from that of other reforms or school effects.
4. *Although STC is spread across all levels of K-16 systems and many types of educational institutions, data from the LPS indicate that the more intensive aspects of STC are reaching relatively few K-16 schools and students.* For example, 52.3% of high schools offer some type of career major, a complex STC activity. However, slightly less than 6% of 12th graders had selected a career major by the time they were in their final year of high school.
5. *STC participation is strongest at the high school level.* Not surprisingly, involvement with LPs is strong at the high school level, falls slightly at the middle school level, and declines dramatically at the elementary level. While the average number of high, middle and elementary schools participating in LPs is about the same (15.9 high schools, 14.7 middle schools, and 13.5 elementary schools), California has approximately six elementary schools for every high school.

6. *LPs are implementing activities that should result in progress toward all California's goals listed in its Performance Matrix.* Analysis of Progress Measures data, LPS data, LP quarterly reports, and LP self-assessments provide substantial evidence that LPs are addressing all of the goals, albeit with varied activities and levels of success.
7. *School-based activities are more prevalent than work-based activities.* Although school-based activities outnumber work-based activities, both types of activities are available throughout the state.
8. *One-time career development activities appear to be the most prevalent form of STC in terms of number of activities and student exposure.* Data from the LPS, local LP evaluations, and LP quarterly reports all suggest this finding.
9. *Low-intensity school-based activities (one-time events such as career awareness days and guest speakers) are more prevalent than high-intensity activities (academies, career paths, integrated curriculum, curriculum aligned with an internship).*
10. *Low-intensity work-based activities (job-shadows, work site visits) are more prevalent than high intensity activities (workplace mentorships, unpaid internships).*
11. *According to the LPS, schools, employers, and labor organizations are implementing many best practices.*
12. *STC efforts include different subgroups of students within the population.* These include minority students, English Language Learners, students with disabilities, students who are economically or educationally disadvantaged, pregnant or parenting students, out-of-school youth, students pursuing occupations that are nontraditional for their gender, and academically gifted and talented students.
13. *California's efforts in STC tend to mirror those observed in other states.* The data from the Progress Measures and surveys show that the range of STC activities in California and the relative emphases on particular categories of STC activities are similar to those observed at the national level.

Implications of Findings for Evaluating System Building and Sustainability

Overall, our analyses of implementation, data quality, and data availability indicate that the Phase II evaluation must strike a balance between (1) canvassing LP activities across the state to achieve a broad understanding of California's STC progress and impact and (2) delving deeper into a more limited number of LPs to better understand systemic change and sustainability of STC. Moreover, the complexity of the three identified research questions in the STC evaluation RFP (How has STC affected student preparation for post-secondary education and career entry? To what degree and in what ways has STC contributed to systemic change? Have STC principles penetrated the community deeply enough to be sustainable?), in combination with the paucity of comparable, reliable data, demands close scrutiny of both qualitative and quantitative data. For example, "systemic change" may manifest itself across LPs in different ways and to different degrees. It might take the form of career paths across many high schools, or the

institutionalization of employer involvement in curriculum development. Similarly, sustainability may involve ensuring that strong business-education partnerships continue after federal funding ceases. It may also take the form of ensuring that instructional practices (e.g., delivering integrated curricula, teaching to skill standards) have spread across many schools.

Additional implications include the following:

1. Diverse STC implementation strategies suggest the need for some flexibility in data collection as well as common protocols/measures for Phase II evaluation activities.
2. Diverse implementation strategies aiming for impact at multiple levels (student, teacher, employer, local system, state system) necessitate evaluation at a variety of levels.
3. Because many STC activities aim to change students' attitudes as well as skills/knowledge, attitudinal measures are appropriate in conjunction with performance and other outcome measures.
4. Seeking correlations between STC activities and changes in student performance or attitudes in places where STC activities have been minimal (e.g., one Career Day over the course of a year) will yield minimally useful information. Therefore, evaluation activities need to focus on LPs where STC activities have been substantial. This suggests that we devote significant evaluation resources to data collection at the high school level and to LPs with relatively high levels of implementation.
5. While there has been limited implementation of complex school-based and work-based activities, the evaluation must focus on these activities since they have the greatest chance for measurable student impact.
6. Given that existing data offer little to no comparability, standardized, well-defined indicators must be developed for Phase II. Similarly, standardized, well-defined data-collection instruments and methods are necessary.
7. Given that many LPs, particularly new ones, are attempting to build systems, rather than isolated programs evaluation of system change is critical.

IV. Implications of Findings for the Phase II Evaluation

Summary

The extraordinary diversity of LP implementation of STC, the broad focuses of STC activities that often aim for impact on student attitudes rather on test scores and other traditional measures, and the limitations of currently available data do not allow for strong inferences about the status of STC in California relative to the research questions of sustainability and student preparation, or about how well LPs are meeting their goals. However, while existing data have important limitations, particularly with respect to STC impact and student outcomes, meaningful information on STC process and implementation can be gleaned from them. Upcoming evaluation activities must strike a balance between (1) canvassing LP activities across the state with standardized data-collection instruments to achieve a broad understanding of California's STC progress and (2) delving deeper into a more limited number of LPs to better understand systemic change and sustainability of STC.

Building from the observations presented in the previous sections, this section presents the statewide evaluation plan for Phase II, the heart of which is an in-depth investigation of the sustainability of STC in California. Our attempt in this White Paper to define the baseline status of STC activities in California highlights the complexity of the California STC landscape. It also highlights the significant challenges inherent to evaluating California's progress and potential for sustaining a statewide STC system. At the same time, the great variety of the STC activities across the state described in this White Paper suggests that there is substantial fodder for the Phase II evaluation of the impact and sustainability of STC in California.

This section begins with the guiding principles for Phase II of the statewide STC evaluation. Next, the evaluation methodology is described, including the evaluation components, data sources, and preliminary analysis strategies. Finally, reporting of evaluation results is discussed.

Guiding Principles for the Phase II Evaluation

It is important up front to make explicit the assumptions or guiding principles that underlie an evaluation plan, particularly for a study of this magnitude. By so doing, interested parties can better understand and provide reactions to the rationale behind the evaluation design and the selection of particular methodologies. Also, they would have more information with which to interpret the results of the study. Five guiding principles drive the Phase II evaluation plan.

The Research Questions Dictate the Focus of the Evaluation

As with any statewide evaluation of a major reform effort, this evaluation study must have a clear and agreed-upon focus in order to yield maximally useful results. Four major evaluation research questions will serve that purpose, driving the evaluation activities for Phase II. These major questions, along with corollary questions for each, are presented in Table 2.

As shown, Question 1 (*What is the status of STC implementation in California?*) addresses the overall picture of STC in California. Interestingly, this initial question is the only one of the four major questions not specified in the RFP. We included this as the first question of the evaluation study in the belief that a comprehensive evaluation must begin by laying a descriptive foundation of STC in California before targeting more specialized questions. In essence, the White Paper represents the initial effort at answering Question 1. During Phase II, we will continue the

research and synthesis begun in Phase I to offer a comprehensive picture of the status of STC in California.

Table 2. Research Questions to Guide the Evaluation

(1) What is the status of STC implementation in California?
- How many schools, teachers, and students are participating in STC activities?
- Are there regional differences or other discernible patterns in the type or degree of STC participation?
- How does STC implementation in California compare with that of other select states?

(2) How has STC affected student preparation for post-secondary education and career entry?
- What types of students are being impacted by STC for post-secondary and employment opportunities? What types of students are not being impacted?
- What is the evidence that students who participate in STC are better prepared for post-secondary education and/or career entry?

(3) To what degree and in what ways has STC contributed to systemic change?
- What changes in school programs or infrastructure (e.g., new models of career development, new career-focused curricula, new partnerships with employers to provide work-based experiences for students) are associated with or can be reasonably attributed to STC efforts?
- How are local and state STC initiatives coordinating with other reform and assessment initiatives?

(4) Have STC principles penetrated the community deeply enough to be sustainable?
- How will services and positions supported by STC funds be supported by other sources after STWOA funding ends?
- Do stakeholders see value in sustaining a STC system?
- How will existing STC systems function after the end of state and federal support?

Our approach to Question 2 (*How has STC affected student preparation for post-secondary education and career entry?*) will be to examine available data to ascertain the impact of STC on student preparation. However, it is important to acknowledge that it is likely too early to draw definitive conclusions about the influence of STC on student academic performance. Any large-scale change to a state's education system, like STC, cannot substantially affect academic performance overnight. It takes time to implement new approaches to teaching, new activities outside the classroom, and enhanced efforts to connect classroom instructions to learning in the workplace. Moreover, there is the added difficulty of attributing any observed change in student

performance to a single systemic innovation. Specifically, the extensive academic standards and assessment reform initiative being implemented across the state confounds any student performance data, making it difficult to directly connect any academic gains to STC. Thus, our approach to Question 2 will include looking at various types of data that may indicate potential STC impact on student preparation for post-secondary education and career entry, such as attendance rates, dropout rates, fulfillment of UC/CSU A-F requirements, rates of transition to college, as well as scores on standardized tests (e.g., SAT-9).

For Question 3 (*To what degree and in what ways has STC contributed to systemic change?*), we plan to examine systemic change in the context of school-based, work-based, and connecting structures and activities. What evidence is there of policy and programmatic changes associated with STC?

Question 4 (*Have STC principles penetrated the community deeply enough to be sustainable?*) overlaps somewhat with the question of systemic change, with both questions focusing on meaningful change. However, Question 4 goes well beyond Question 3 to address the central issue of sustainability. For this final and most critical research question, we will look at both structural and financial aspects of STC sustainability.

The Essential Elements of STC Must be Reflected in the Evaluation

Table 3 presents the essential elements of a fully implemented STC system. Developed with input from the IAP and consistent with the STWOA and current thinking on STC, this list is proposed as an operational definition of STC. For purposes of the evaluation, the essential elements will be used as the lens through which to examine and analyze local efforts. However, each LP may have a different configuration of the essential elements, based on local conditions, priorities, and resources. The wide range of local adaptations of STC also leads to different definitions of what constitutes an STC student. Therefore, the evaluation approach will *not* be to "check off" that each LP demonstrates every element on the list. Instead, the list will be used as a reference tool in a more holistic approach to looking at local and statewide STC efforts.

Triangulation of Multiple Methods and Data Sources Will Help Ensure the Validity of the Evaluation Findings

As previously described, one of the major findings of this Paper is the unevenness in the availability, format, and quality of existing data on STC in California. The proposed evaluation

strategy must recognize and adjust for this situation. One way is to purposefully triangulate different evaluation methods and data sources, avoiding over-reliance on any one method or data source. In this way, shortcomings in the data from any one particular source can be mitigated through the collection of similar evidence by multiple methods and from multiple sources. The specific methods and data sources to be used are discussed in detail later in the section.

Stakeholders Need Regular Opportunities and Multiple Avenues to Inform the Evaluation Process

Critical stakeholders need multiple opportunities and avenues (e.g., face-to-face meetings, email, and conference calls) to provide feedback so that inclusiveness can be efficiently achieved. Also, stakeholders are responsible for providing actual data for the STC evaluation. Thus, it is important that project staff continue regular communication with the IAP as well as existing statewide STC groups (e.g., STC Advisory Council, System Evaluation and Accountability Committee, Employer and Labor Involvement Committee). In addition, the recent formation of the two-pronged Practitioner's Panel (i.e., Steering Committee plus Technical Review Committee) will ensure regular input/feedback by the LPs on statewide evaluation-related activities. Specifically, the Practitioner's Panel will review the evaluation plan and all instrumentation to help ensure their appropriateness and feasibility.

The Evaluation Study Must Successfully Balance the Needs to Minimize Burden on LPs with Achieving Comparability in Data and Data Gathering

A comprehensive evaluation necessarily involves heavy data needs. This can result in a significant burden on LPs, a major data source for the evaluation study. Project staff will minimize the burden on LPs by making maximal use of existing data and avoiding unnecessary duplication of data-collection efforts. Minimizing the burden to LPs also requires building in some flexibility in the evaluation design to accommodate LP activities. However, the requirement to minimize burden must be weighed against the need for comparability of data gathering. As the evaluators, we will develop common data gathering methods and instruments with broad-based input and feedback from the Practitioner's Panel to ensure both the comparability of resulting evaluation data and the resource efficiency of the evaluation effort.

Table 3. Essential Elements of a Fully-Implemented School-to-Career System

School-Based Learning

- School-based learning about the world of work based on high academic and technical standards

- Integrated academic and applied/vocational curriculum and instruction developed through business-education cooperation
- Age-appropriate educational and career guidance and counseling services from kindergarten through grade 16
- Opportunities to explore and develop awareness of educational and career options
- Industry Skills Standards and student certifications that reflect high-level academic and technical content and are recognized by employers and educators
- Curriculum development based on current and projected labor market information

Work-Based Learning

- Experiences in the workplace, in school-based enterprises, and through simulations that expose students to broad career alternatives and offer opportunities for in-depth exploration
- A continuum of experiences that show students the value of progressively higher levels of skill and education (e.g., work site visits, internships, community service, job shadowing, mentoring, school-based enterprises, youth and registered apprenticeships, cooperative learning, and paid employment)
- Opportunities provided in a safe and healthy work environment that meets all legal requirements

Linkages

- Activities that connect school-based and work-based learning and allow students to correlate work experiences with a variety of academic topics
- Kindergarten through post-secondary linkages that keep teachers informed of latest developments and allow students to progress seamlessly to higher steps of learning
- Coordination and integration with existing education, workforce development, welfare reform, economic development initiatives, programs, and resources
- Adult and alternative education integrated into LP
- Coordination and provision of services through One-Stop Career Centers, allowing students and teachers greater access to labor market data and career and training opportunities

Stakeholder Involvement

- Support and participation of key stakeholders in planning, decision-making, and implementation
- Professional development of all relevant stakeholders to continually spread and increase knowledge of STC concepts and best practices
- STC outreach and communications to improve public awareness and develop more participation

Scope of Partnership

- Commitment of required and recommended partners, including both time and resources
- LP uses demographic data to ensure the partnership represents the community population, with decision-making responsibility shared among stakeholders
- Participation of community-based organizations
- Continuous improvement of the STC system, based on regular feedback and collaboration with relevant stakeholders

All Students

- Equal access for all students to all STC components (Sections 102-104 STWOA), with all students being aware of and able to obtain locally available STC services
- Specialized support and resources for all students, as needed, to guarantee equal access for special-needs or at-risk students
- All students are prepared for and have opportunities for high-skill, high-wage careers, expanded opportunities, and further learning

Accountability and Sustainability

- Oversight and communication within the organizational structure of the LP that facilitate participation of stakeholders and reinforce accountability
- Performance indicators (Section 402 STWOA) are collected and used to improve planning and implementation
- Sustainability and expansion of the STC system by obtaining commitments for resources from any appropriate source
- Capacity building, including effective use of technology to enhance learning and deliver related services

Evaluation Methodology

As specified in the guiding principles, the evaluation will rely heavily on triangulation of multiple, complementary evaluation methods in a comprehensive attempt to answer the research questions of interest. Specifically, the evaluation methodology consists of four major categories of evaluation methods: a systematic review of data from extant measures, project-developed survey research (i.e., employer/labor survey and project-specific survey of LP leadership), a comparative analysis of California's STC effort to those of other select states, and longitudinal case studies. Both quantitative and qualitative evaluation research techniques will be used across the four methodologies. The first three evaluation methods are aimed primarily at cultivating

breadth of information. As such, these methodologies will provide the information necessary to "paint a picture" of the full range of STC involvement and impact across the state, covering all four research questions. In contrast, the longitudinal case studies will provide the opportunity for detailed, in-depth information. As such, this method will be used to better understand complex issues, such as the impact of STC involvement on student outcomes, the contribution of STC to systemic change, and the sustainability of STC efforts. Each specific evaluation component is described below, including its purpose, the approach to data collection, and strategies for data processing.

Review of Data from Extant Measures

Purpose and description

Just as extant information was analyzed and synthesized for the White Paper, project staff will continue to examine existing sources of data for evidence related to this evaluation's questions of interest. Such external data sources include the Progress Measures Survey.

Roles and responsibilities for data collection, processing, and reporting

Building on the research performed for this Paper, project staff will continue to be responsible for collecting new and/or revised data from the ongoing data gathering efforts described above. We will analyze and synthesize the information from extant sources across years to make comparisons and look for growth or other trends of STC activity within and across LPs.

Project-Developed Survey of LP Leadership

Purpose and description

The leadership of all California LPs will be surveyed with a project-developed instrument at key points during Phase II. The purpose of this survey is to collect targeted information from all LPs about their STC activities that is not available through existing information sources. This survey is critical because it is the only project-developed data-collection instrument intended for all LPs and will provide a common base of key information about the LPs. It will be administered by mail twice during Phase II: Spring 2001 and Spring 2002.

The project-developed survey of LP leadership will include items that address key aspects of each of the four major research questions. Topics will also include those not adequately addressed by existing surveys, such as the state rollout strategy and activities; coordination of state and local resources; and the incorporation of state and national skill standards into local STC. Even so, the survey will be brief—not more than two two-sided pages in length, so as not to overburden the LPs. As appropriate, project staff will employ clustering and factor analytic techniques to help reduce and interpret the survey data.

Roles and responsibilities for data collection, processing, and reporting

Project staff will be responsible for providing advance notice and orientation to the LPs about the purpose, content, and schedule for administration of this survey. We will follow up via telephone with those LPs who do not respond within the stated timeframe in an attempt to achieve a 100% response rate. The results of the first survey will be incorporated into the interim evaluation report, while that of the second survey will be included in the final evaluation report. The final report will also highlight any progress made between the first and second surveys by comparing the results of the two surveys within and across LPs.

Survey of Employer and Labor Organizations

Purpose and description

The survey of employer and labor organizations was first administered in May 2000. This four-page survey asks employers and labor organizations about their awareness of STC, the nature of their participation in STC activities, their working relationships with the LPs, their perceptions about the benefits and challenges of STC, and their willingness to make long-term commitments to STC. It was designed to be simple and brief, consisting predominantly of closed-response items. (The results of this initial survey will be summarized and presented to the IAP in July 2000.) This same instrument will be administered to employers and labor organizations again during Phase II (Spring 2001) in order to obtain more comparable, comprehensive information about change and growth employer and labor involvement in STC.

Roles and responsibilities for data collection, processing, and reporting

In order to understand data-related parameters for the Phase II administration of the employer and labor organization survey, it is important to first review the processes for the initial

administration. A major purpose of the first survey is to provide information to inform the work of STC groups, such as the STC Employer and Labor Involvement Committee. A secondary purpose of this survey is to collect baseline information on employer and labor STC involvement in order to inform subsequent evaluation activities. In preparation for the survey, LPs were asked to provide contact information on the employers and labor organizations that they had invited to participate in STC activities. They were also asked to rate the level of participation (from minimal to substantial) for each of the employers and labor organizations. Project staff followed up with many of the LPs to secure this information.

More than 12,500 employer names were provided from 32 LPs, whereas 100 labor organizations were identified by 25 LPs. Given the large number of employers identified, the decision was made to send the survey to a 20% random sample. In contrast, the labor surveys were sent to all labor organizations identified by the LPs because of the small overall total.

One option for the second administration of the employer/labor survey would involve a random sample of all employers and labor organizations throughout the state. This approach would yield a comprehensive picture about how employers/labor across the state view STC. However, this approach is dependent on use of an existing and readily accessible data file for employers and labor organizations, respectively. Available project resources will *not* allow for the creation of these databases specifically for this project nor are project resources sufficient to conduct substantial reformatting, manipulation, and error-checking/resolution on an existing statewide database system. Moreover, surveying a new, random, statewide sample would not yield data against which data from the first survey can be meaningfully compared. We would be comparing results from two substantially different universes of employees and labor organizations.

A second option, given the resources of this project, is to cast the second survey administration as a follow-up to the first survey administration. Specifically, we are proposing a two-pronged survey approach for employers: (1) re-survey of the actual respondents to the first survey and (2) survey of another random sample of employers from the existing project database of employers. For labor organizations, we propose: (1) a re-survey of respondents to the first survey and (2) a survey of additional labor organizations identified by the LPs involved in the case studies.

In addition to cost efficiency, there are several other benefits to this proposed approach that make it preferable to the first option described above. First, it includes a focus on the subpopulation of employers that have some exposure and familiarity with STC. Surveying a sample of all employers in California may not yield information as useful as targeting those that have familiarity and can provide information about what works and doesn't work from an informed perspective. Second, this approach facilitates the examination of progress over time by surveying the same respondents twice, with a reasonable amount of time separating the two survey administrations. Finally, it minimizes the burden to LPs by making maximal use of the information they have already provided. As described, the only new information request would be of case study participants (who are expected to provide in-depth information to evaluators and are receiving additional funds to do so) for additional labor contacts. The rationale for this request is that, unlike employers, the number of labor organizations identified is very low. Hence, we would like to increase the numbers in as efficient a manner as possible.

As with the first employer/labor survey, project staff will be responsible for administering the survey, following up with non-respondents, data processing, and data analysis.

A Comparative Analysis of California's STC Effort with Those of Michigan, Oregon, and Florida

In an effort to go beyond California data to understand STC in California, we will examine the performance of three exemplar states representing STC environments and strategies particularly relevant to California (Michigan, Oregon, and Florida) and will track the progress of STW in these three states. While most of the California STC evaluation will examine California relative to the goals it has set for itself, these comparisons, using available, comparable data (Progress Measures and LPS results), should illuminate how California is performing relative to other successful states. We should better understand California's progress with regard to:

- provision of STC experiences/activities to students;
- employer involvement:
- system growth;
- sustaining efforts after federal funding;
- implementing STC systems aligned to standards-based practice;
- implementing STC in diverse economies, specifically industrialized and non-industrialized;

- implementing STC in differing levels of urbanicity (urban, rural, and suburban); and
- implementing STC in multicultural, multilingual regions.

Michigan, Oregon, and Florida were selected for this comparative analysis because each of these states exemplifies successful aspects of STW and is demographically, industrially, and/or economically similar to California. Michigan and Oregon represent two states considered advanced in implementing STW initiatives in both industrial and non-industrial sectors. Both enjoy strong industry and statewide support and have demonstrated success in sustaining components of their efforts after startup federal STW funding ceased in 1999. Florida is a state demographically similar to California, with success in implementing innovative STW initiatives, including successful activities in high-poverty areas.

The comparisons will center on key indicators from the Progress Measures and LPS that address system growth, sustainability, and availability/spread of STC student experiences. Examples of these indicators are: amount of LP funding from non-STWOA funds, number of employers offering work-based positions, number of students receiving integrated curricula, and number of schools offering career development classes. In addition, telephone interviews with key administrators in each state will be conducted to obtain information on each state's STW rollout strategy and activities.

Should California compare relatively well, we have an important indication that California's strategy is working. Should California compare unfavorably, it may be worthwhile to investigate why, and to identify what modifications to consider.

The following discussion provides an overview of each state's STW initiative and the goals they hope to accomplish.

Michigan

Michigan is successfully implementing STW activities across the state, including its industrialized regions. Michigan's STW system is coordinated by the Michigan Department of Education (MDE) in conjunction with the Michigan Jobs Commission (MJC), a group of state policy makers and business representatives. This strategic relationship has allowed for the successful implementation of STW activities in various regions throughout the state over the past

few years. In 1998, the MJC and MDE began assisting 25 Workforce Development Boards (WDBs). Building strong linkages with the employer community is the basis of the WDB system. To ensure this, more than half of WDB members are from the private sector. This requirement guarantees that the business community's perspective directs the implementation of STW programs. Other states, like California, do not require its LPs to have such a high degree of employer involvement. Participation from the Michigan private sector is strong, and stakeholders are widely represented in leadership positions. Legislative support for work-based learning is such that businesses receive $2,000 in tax credits for providing registered apprenticeship opportunities.

Michigan's STW model emphasizes the close interaction of two defined parts, LPs and programs. Furthermore, it emphasizes career exploration and the transition to work.

- Partnership: The STW effort must be a collaborative effort between education and business, based on the concept of providing all students with career exploration and work-related experiences.
- Programs: STW officials must develop and implement specific programs, services, and activities offering students a comprehensive look at available career choices. A curriculum must be developed that supports both career exploration and experience and includes the following: job shadowing; counseling; career days; tours; work-based training; mentoring; and co-op work experience. The inclusion of a staff development component is imperative to provide educators the exposure to the needs, skill levels, and requirements of the business world.

State support to WDBs has been substantial. State staff provided technical assistance, field visits, teleconferences, seminars, and workshops to the network of LPs to assist LPs in their implementation efforts. A career exploration curriculum was developed in 1996 to help teachers introduce career awareness into their classes. Furthermore, a curriculum framework incorporating career majors and work readiness skills was distributed to all schools in 1997.

STW implementation in Michigan is steadily progressing. During the last five years of implementation, the state has created 45 LPs, including all labor market areas in Michigan. All schools are required to include STW content in their school improvement plans. Last year, Michigan received additional funds amounting to more than $2.6 million to support its statewide STW program, particularly the strategies that will help sustain the program after federal funds are exhausted. To facilitate a transition after the federal funding period, the state has committed $23 million to fund Career Prep activities, a continuation of STW activities.

Michigan's STW goals

Michigan established clear, ambitious goals to be reached by the graduates of Class 2000 and may be considered a model in its plans for documenting impact and attaining sustainability. In comparison to California's goals, Michigan's are quite prescriptive and measurable. Key Michigan goals are:

- 100% of graduates will have at least one job shadowing experience during grades 8-10.
- 100% will have an Education for Employment Development Plan.
- 90% will have an endorsed high school diploma.
- 50% will have participated in a structured, paid work-based learning experience.
- 40% will have completed a career major linked to a community college associate degree program or registered apprenticeship.
- 30% will have earned a skill certificate in a career field.
- 100% of Michigan citizens will understand the goals and elements of the STW Initiative.
- 50% of Michigan high schools will offer interdisciplinary career majors.
- 25% of Michigan employers will be actively participating in work-based learning options.[21]

Oregon

One of the first eight STW implementation states, Oregon is considered one of the national leaders in STW implementation. Oregon's STW initiative began in 1991 with the passage of the Oregon Educational Act for the 21st Century and the Oregon Benchmarks. These ambitious statutes continue to be sustaining forces behind efforts to develop a standards-based educational system that will prepare all Oregonians for productive and successful futures. Together, they call for sweeping educational reform, including the implementation of a comprehensive statewide student certification system for Oregon's high school students.

Similar to California, Oregon created a basic framework for its statewide STW Opportunities System rather than establishing a specific program model. The system is based on flexibility and, like California's overall reform efforts, on high standards. Oregon's STW system development is built around eight fundamental elements. These serve as a framework for schools to design and implement STW programs while encouraging creative planning and application. The eight essential elements are:

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[21] Michigan STW Opportunities–1998 Profile.

1. Provide career awareness at the elementary and middle school levels that introduces students to the world of work.
2. Provide career exploration and counseling for students pursuing the Certificate of Initial Mastery (CIM)—culminating around grade 10—that exposes them to a variety of career options through work site experiences.
3. Provide structured work-based learning opportunities for students pursuing the Certificate of Advanced Mastery (CAM), utilizing individual plans that guide and assess students' experience at the workplace. When possible and appropriate, these work-based learning experiences will be paid.
4. Integrate and coordinate academic and occupational instruction as well as school- and work-based learning.
5. Recognize diverse needs of students and provide multiple learning strategies.
6. Award credentials for both academic and occupational skill mastery that are recognized by post-secondary institutions and employers.
7. Employ a governance infrastructure that represents a broad coalition of employers, teachers, students, parents, local policy leaders, and labor.
8. Conduct continuous evaluation to measure program effectiveness as a basis for modification and improvement.

For most of the state's regions, initial federal STW funding has ceased, so many LPs have already transitioned to almost full local or regional support. However, the ability of local entities to provide financial support was cut dramatically by legislation severely limiting the ability of localities to collect taxes. Regarding sustainability of classroom activities, Oregon revised the implementation timetable for its leading edge Certificate of Initial and Advanced Mastery (CIM/CAM). Once the CIM/CAM effort is implemented, schools will offer students occupation-based curricula. However, the state delayed CAM implementation until 2004-2005. This reduced the pressure to implement STW, especially career majors, and focused the efforts of the schools on preparing students for the statewide CIM proficiency testing.

Oregon's STW goals

Like California, Oregon's goals are loosely defined and support local control. Oregon's main goal for its STW efforts is to, along with other education and workforce development initiatives is to, "prepare its youth for the global competition and changing world of work." Through STW, students will acquire the skills and knowledge essential to compete in the global economy and promote lifelong learning.

Florida

Florida has substantial demographic similarities with California—it implements STW in regions serving multicultural, multilingual populations. Similar to Oregon, Florida began STW activities before it was awarded federal STW funding. Florida's STW model is designed to address specific process, implementation, and evaluation components that ensure a cohesive and high-quality systemic effort. It is flexible in application, yet structured to support a consistent approach to statewide STW implementation. The model addresses system contents that are common to helping both in-school and out-of-school youth. It also connects with the state's school-improvement cooperative education, workplace mentoring, service learning, clinical experiences, and school-based enterprises. Finally, the STW model is tied in with the state's school-improvement process, designed to initiate systematic changes that produce innovative, relevant instruction in the classroom.

Florida LPs are required to address the STW components listed below in their plans and are asked to describe their strategies for implementing these components within an STW system:

1. Public awareness involves identifying programs and methods that can promote broad political and public support for the regional STW system, as well as provide recruiting mechanisms.
2. Professional development provides capacity-building and developmental training to all stakeholders based on existing mechanisms.
3. Career guidance and counseling ensures that each participating institution implements a comprehensive career-guidance and counseling program. Building on the success of Florida's legislatively mandated career plan, programs assist each student in selecting an appropriate career major.
4. Support services provide programs for health, human, and remedial-education services to ensure the success of all students.
5. School-based programs build on and expand existing school-based initiatives and programs such as Tech Prep, vocational education, and applied academics.
6. Work-based programs include existing work-based programs and strategies offered under Workforce Development, as well as school-based or employer-based models such as apprenticeship, youth apprenticeship, pre-apprenticeship, internship, job shadowing, cooperative education, workplace mentoring, service learning, clinical experiences, and school-based enterprises.
7. Work site development ensures the identification of work sites and the recruitment of employers to provide work-based and/or work site learning experiences for all students.
8. Placement address the matriculation of graduates into related occupations or continuing-education programs.

9. Evaluation and outcomes address the method by which each LP will examine its process and assess the product of its activities. Activities implemented by the regional partnership should be evaluated by both formative and summative assessments.

Like California, multiple state bodies (Department of Education, Department of Labor and Employment Security, and the Director of the STW evaluation) work together to promote STW. Twenty-four Regional Workforce Development Boards (RWDB) have been created using existing geographic structures for community colleges (with several areas merged) and for Tech Prep consortia. The RWDBs are responsible for reviewing and approving regional LP proposals submitted to the state for funding. Twenty-eight regional LPs were funded.

Florida' s STW goals

Listed below are Florida's goals for its STW system. They are similar to Oregon's and California's in that they are loosely defined and flexible.

- Higher academic standards: core subjects are emphasized and courses are as demanding as they are relevant to students' lives and the world of work.
- Reduced dropout rate: showing the relationship between what students are learning in school and their career aspirations increases the relevance of learning and reduces the likelihood that students will dropout. Students are encouraged—expected—to stay in school, meet graduation requirements, and develop into responsible citizens.
- Improved career opportunities for all: students' job prospects are enhanced when they receive hands-on training along with instruction in employability skills and SCANS competencies.
- More highly skilled workforce: employers gain a more highly skilled workforce when schools provide a work-based curriculum and on-site training.

Roles and responsibilities for data collection, processing, and reporting

WestEd/MPR will obtain the Progress Measures and LPS data with the permission of Oregon, Florida, and Michigan. Project staff will also interview key administrators in each state in order to obtain information not available through the national surveys on state roll out strategy and activities as well as to clarify and supplement information obtained through the national surveys. WestEd/MPR will conduct the comparative analyses, synthesize the results, and present them in the two evaluation reports.

Longitudinal Case Studies

Purpose and description

The longitudinal case studies are a key component to the overall evaluation. While the other components focus on breadth of information from large and representative samples of constituencies, the unique contribution of the case studies is the ability to garner complex, in-depth information. Only through concerted study of selected LPs can the evaluation glean detailed information and insight about the inner workings of STC and the nuances of systemic change. Most importantly, the case studies will allow us to investigate in depth the ways in which STC sustainability is being achieved.

The strategy is to select 15 to 18 LPs for case studies. As was specified in the Request For Proposal for this statewide evaluation study, $2.5 million will be distributed to LPs to conduct

the case studies. In August 2000, LPs will be invited to submit a competitive bid for case study funding through a new Request for Proposal issued by the IAP. Successful bidders will be granted funds to conduct case studies to begin in Winter 2000 and extend through summer 2002 (anticipated level of funding for each LP ranges from $70,000 to $250,000, depending on size of LP and scope of work).

The availability of such a substantial pool of funds for selected LPs will support intensive data-collection efforts at the local level. As will be described later in detail, the LPs themselves will have the primary responsibility for data collection and analysis for the case studies, whereas WestEd/MPR staff will be responsible for training of LPs, development of instruments, monitoring progress, and synthesizing information across the different case studies. Given the key role of the case studies to the overall statewide evaluation plan, project staff are working closely with the IAP and obtaining input from the Practitioner's Panel to establish the criteria for selecting LPs for the case studies. The final selection criteria will be determined by June 2000.

Table 4 shows the key sample characteristics and selection criteria that WestEd is proposing for the case studies. We believe that a sample of 15 to 18 LPs should be sufficient to address a range of STC models of governance and implementation strategies in California. As shown, we are proposing that the overall sample be diverse, with representation from different geographic regions, types of locales (urban, suburban, rural), sizes of LPs, and populations targeted for participation. To achieve this diversity, we will stratify the sample, thereby ensuring representation on important variables of interest.

Table 4. Key Sample Characteristics and Selection Criteria for the Case Studies Sample

Key Sample Characteristics

A. Fifteen to 18 LPs.

B. Diverse group of LPs.

- Minimum of 2 cases from each of three types of geographic locales (urban, suburban, rural).
- Minimum of 2 cases from each of three sizes of LPs (number of students served).
- Diversity in governance models (e.g., decentralized versus centralized, employer-driven, school-driven).
- Diversity in implementation strategies (e.g., mini-grants, professional development, work-based learning).
- Balanced distribution across the state's geographic regions (north, south, central valley, central coastal).

C. Plurality of high-implementation LPs.

D. Representation of LPs with medium and low implementation.

E. Plurality of LPs that are at least two years old.

Criteria for Selection of Individual LPs

1. Quality of LP's previous evaluation efforts, particularly with regard to data similar to that which will be gathered for the case studies. LP's record of completing Progress Measures and LPSs, quarterly reports, self-assessments for the IAP, independent evaluations, and submission of Employer/Labor Organization data will be considered.
2. LP commitment to using state-developed instruments and to providing the state with data from those instruments. Participating LPs must use state-developed instruments and protocols. Comparable data allow for cross-LP and statewide comparisons.
3. Relevant experience of person(s) who will carry out the case study. LPs selected for participation should employ a local evaluator who is experienced in gathering and analyzing STC data. LP evaluators should be ready to perform case study duties starting in November, 2000.
4. LP capacity to provide student performance data to track a cohort of students and to access teachers, administrators, students, parents, employers, labor and organizations.

In addition, the sample of LPs for the case studies must reflect the wide array of LP implementation strategies and provide data necessary to answer our research questions. Given

the costs associated with conducting longitudinal case studies, it will be important to pay particular attention to high-implementation LPs (i.e., those that are well underway in their implementation of STC strategies and activities) in order to thoroughly investigate the conditions that lead to success and sustainability. LPs that have not had major implementation of STC activities will not be able to give us substantial data about students who participated in STC or about sustainability. The return on investment in longitudinal case studies will be insufficient if the selected sample expends too many resources focusing on low-implementation LPs. Nevertheless, inclusion of some LPs that are struggling with STC implementation is important too, allowing in-depth study of the possible barriers to success. Also, preference in consideration will be given to LPs that have been in existence for at least two years because older LPs will have had the time necessary to achieve system-wide implementation and student participation. New LPs, in general, will not have had enough time to reach large numbers of students or to move beyond the "start-up" phase.

As shown in Table 4, other criteria for selection of individual LPs are: the quality of the LP's previous evaluation efforts; their commitment to using project-developed evaluation instruments; the relevant experience of the person(s) hired by the LP to conduct the evaluation activities; and the LP's capacity to provide data. These important characteristics will help ensure that the selected LPs are successful in providing meaningful data for the statewide evaluation.

Because of the resources dedicated to the selected LPs to conduct the case studies, the design will involve extensive use of both quantitative and qualitative techniques. Planned quantitative methods include LP collection and analysis of the following types of quantitative data from surveys and existing databases (e.g., CBEDS): numbers and types of schools, teachers, and students participating in STC activities; and student enrollment, attendance, and performance data. As described previously in this Paper, however, we recognize that there are numerous challenges to accessing, collecting, analyzing, and interpreting such data.

In light of the challenges identified in this Paper related to access, availability, and quality of quantitative data related to STC implementation, the case studies will place a strong emphasis on qualitative methods. Specifically, selected LPs will use the following qualitative data-collection strategies:

- *Telephone interviews with LP contacts at key institutions.* Such interviews will yield detailed information about targeted schools, post-secondary institutions, business partners, labor partners, etc., and are intended to "pave the way" for on-site visits.
- *Individual and group interviews (including focus groups) with key personnel, administrators, business and labor association leaders, teachers, counselors, workplace mentors, parents, and students.* In some instances, individual interviews will be more appropriate to secure in-depth information about LP activities. In other instances, group interviews will allow for larger numbers of individuals to express their views in a relatively cost-efficient manner.

Roles and Responsibilities for Data Collection, Processing, and Reporting

Project staff will be responsible for working closely with the IAP to finalize the criteria for selection of LPs, to develop content portions of the RFP (criteria, definitions, scoring rubric, and other elements, as necessary), and to review the RFP for LPs interested in participating in the case studies. Next, project staff will provide orientation, training, and ongoing monitoring/technical assistance to selected LPs on the case study design and data collection. All data collection will follow standardized protocols. For example, protocols for site visits will provide guidelines, not only on the types of questions to ask of each targeted respondent, but also on the number and qualifications of staff that should be assigned to conduct site visits. Such protocols will help ensure that consistent, comparable information is collected from all sites and will facilitate the organization of data for analysis and reporting.

Project staff also will be responsible for the development of all common evaluation instrumentation (e.g., interview/focus group protocols, classroom observation checklists). Staff will then monitor the data-collection efforts of the LPs and serve as a resource throughout the duration of the case studies. The WestEd/MPR project team will also have the responsibility for summarizing and reporting the aggregate results from the case studies to the IAP.

The data-related responsibilities of individual LPs that are selected and funded for case studies will be significant. They will be responsible for conducting the actual case studies for their respective sites, including collecting the data, conducting first-order data analysis (e.g., generating descriptive statistics) and reporting results (e.g., data summaries, evaluation reports). They will also be responsible for timely submission of data to WestEd/MPR staff. In particular, LPs will be responsible for meeting two important project deadlines: providing data and analysis in time for WestEd/MPR staff to compile, analyze, and then incorporate them into the interim

evaluation report and the final evaluation report. As such, LPs will need to collect and submit qualitative case study data to WestEd by April 2001 in order to inform the interim evaluation report. Given the difficulty in collecting student outcome data, such data will be due in January 2002, in time to inform the final evaluation report. Below is a list of specific data-related tasks that LPs could be asked to perform for the case studies:

1. Hire an external evaluator to conduct the tasks described below.
2. Use data-gathering instruments and protocols supplied by WestEd/MPR, during time periods specified by WestEd/MPR.
3. Collect data from samples drawn from the groups listed below. Staff and evaluators from each participating LP will be responsible for obtaining access to schools and/or school districts to administer surveys of students and to interview school staff. Substantial follow-up will be necessary to achieve desired high response rates.
    - Employers of students who participated in high-intensity STC activities (e.g., career majors, academies);
    - Two cohorts of high school seniors ('01, '02);
    - Follow-up data from the '01 cohort;
    - Administrators at all high schools in the LP;
    - Administrators at all community colleges in the LP; and
    - Administrators at all middle and junior high schools in the LP.
4. Complete Progress Measures and LPSs, including student participation rates.
5. Gather select CBEDS data (e.g., A-F completion rates, advanced math completion rates) for the high schools in the LP. CBEDS data will be gathered twice (for the 99-00 year and the 00-01 year).
6. Gather select student performance data (SAT-9 scores, attendance, discipline, dropout) at the school (not student) level.
7. Identify and interview employers of high school students.
8. Identify and interview school site staff.
9. Gather documents relevant to the impact of STC on student performance and structural change.
10. Analyze and report on <u>all</u> data listed above, using prescribed formats provided by WestEd/MPR.

Clearly, the above list is very comprehensive. It will be the responsibility of individual LPs during the competitive bid process to describe which of the above they can and cannot provide and why as well as to propose other evaluation tasks that may be of particular interest to them.

Reporting of Evaluation Results

The results of the evaluation study will be presented in two separate reports: an interim report (due June 2001) and a final report (due June 2002). The interim report will summarize the evaluation research results through Spring 2001, serving to foreshadow the summative findings of the comprehensive final report.

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Summary 1: The National Evaluation of STW Implementation

Hershey, A., Silverberg, M., Haimson, J., Hudis P., & Jackson, R. *Expanding Options for Students: Report to Congress on the National Evaluation of STW Implementation*, Mathematica Policy Research: Princeton, NJ, February 1999. [Hereafter referred to as the National Evaluation.]

The purpose of this study is to assess the implementation of STW across the United States. The major evaluation questions are:

- Have states and LPs created coherent STW systems of connected, sustainable practices and programs?
- How do STW systems change what students do at the elementary and secondary education levels?
- How do post-secondary paths change as STW systems are developed?
- Are the activities and practices the STWOA promotes adopted on a wide scale?

The 1999 report draws on the following sources:

- 1996 and 1997 LPSs.
- In-depth case studies of eight states[22] with two rounds of visits to 39 LPs, in spring 1996 and in spring and fall 1997.
- Surveys of random samples of 12th graders in eight in-depth study states in spring 1996 and 1998, and a fall 1997 follow-up survey of the class of 1996 sample.
- Analysis of high school transcripts for the 1996 student sample.

[22] The in-depth study states are Florida,.Kentucky, Maryland, Massachusetts, Michigan, Ohio, Oregon, and Wisconsin.

Summary 2: The STW Progress Measures

Medrich, E., Merola, L., & Ramer, C. STW Progress Measures: A Report to the National STW Office for the Period July 1, 1997-June 30, 1998, MPR Associates: Berkeley, California, February 2000. [Hereafter referred to as Progress Measures.]

This annual report, based on a yearly survey sent to all funded STW LPs, provides information about the growth of the STW enterprise. It has four objectives:

- To establish a system of performance measures for assessing progress in meeting the objectives of the STWOA.
- To develop a common language around STW, so that data will be comparable and of high quality across LPs and across states.
- To provide a framework within which states can design their own STW data systems for program improvement purposes that range beyond the reporting function at the national level.
- To help state and local STW practitioners develop the skills necessary to measure the success of their efforts.

Results from the 2000 report are based on data collected via a mail-in survey that covered the period July 1, 1997-June 30, 1998 and are based on responses received from 770 of the 985 LPs (78%) in 34 of 38 funded states. The survey collected information on indicators of STW systems development; school and student participation; employer participation; student outcomes; and state and local resources beyond federal STW funds.

Summary 3: STW in the 1990s: A Look at Programs and Practices in American High Schools

Visher, M., Lauen, D., Merola, L. & Medrich, E. *STW in the 1990s: A Look at Programs and Practices in American High Schools,* MPR Associates: Berkeley, California, August 1998. [Hereafter referred to as NLSY.]

This study explores the question of whether high schools are changing in directions envisioned by the Act, regardless of whether they were funded by the STWOA. In the 1996-1997 school year, a large sample of high schools (approximately 25% of all U.S. high schools) were surveyed for the National Longitudinal Survey of Youth (NLSY97), a study designed to document the transition from school to work and into adulthood. The school survey, completed by high school administrative staff, describes the characteristics of STW programs and practices such as career majors, job-shadowing, and internships, in addition to other important school programs, characteristics, and emphases. Seventy-two percent of the eligible schools returned completed questionnaires.

APPENDIX C

PERFORMANCE MATRIX AND OUT-YEAR PERFORMANCE MATRIX

Available Upon Request

APPENDIX D

ANALYSIS OF PERFORMANCE MATRIX

GOAL ONE: COMPREHENSIVE LOCAL SCHOOL-TO-CAREER SYSTEM	
System Element	**Examples of Activities/Strategies Used by Local Partnerships**
School-based learning with high academic and technical standards	Create curriculum development plan related to curriculum integration, career pathways, curriculum sequencing, articulation
	Recognition programs for students reaching high standards
	Integrate SCANS skills into academic and technical curriculum
	Integrate STC goals and activities into school and district site plans
	SCANS/STC training for teachers, staff, college faculty, private sector partners
	Create career paths
	Require students to participate in STC experiences
	Create new position for person to work with sites to increase STC capabilities
	Use funding from other sources to mesh different programs with STC
	Develop new courses related to STC
	Teacher Job Shadowing
	Develop a matrix of transferable academic skills
	Teachers to develop performance standards that relate to STC goals/ Teachers to identify ways academic content standards can be addressed in curriculum
	Create accountability system
	Implement mini-grant process to provide incentives to teachers to develop innovative projects
	Conduct on-going self-assessment surveys related to SCANS competencies
	Conduct a survey to assess current STC activities
	Create mechanism to communicate with all STC partners
Work-based learning (in a continuum)	Create new position for person to work with sites to facilitate access to work-based learning opportunities
	Expand work-based learning opportunities
	Increase awareness at and provide resources to school sites about work-based opportunities
	Teacher Job Shadowing/Internships
	Create accountability system
	Award schools funds through competitive process
	Conduct career pathway surveys of local employers to determine their level of participation in work-based learning
	Staff and business partners will identify: a continuum of skills and related curriculum; business sites to accommodate students; mentors for students; and implement a work-based learning continuum

APPENDIX D

ANALYSIS OF PERFORMANCE MATRIX

GOAL ONE: COMPREHENSIVE LOCAL SCHOOL-TO-CAREER SYSTEM	
School- and Work-based connecting activities	Develop student Learning Plan/Career Portfolio
	Create database of employers, placement information
	Require students to participate in STC experiences
	Teacher training/job shadowing/internships
	Training for employers/workplace mentors/supervisors
	Develop contractual agreements between schools/businesses
	Identify exemplary connecting activities and promote their use
	Create accountability system
	Award schools funds through competitive process
	Older students make presentations to younger students about portfolios
	Recruit a business mentor for each high school
	Identify appropriate connecting activities between work-based learning and ROP/vocational programs
	Provide community awareness and solicit support/involvement
	Increase articulation between STC program and existing, related programs
Integrated academic and applied education	Teacher/staff training in integrated curriculum/STC
	Teacher to participate in work-based experience to integrate site needs into teaching
	Teachers funded to develop a videoconferencing class (mini-grant)
	Use mini-grant process as incentive to encourage development of innovative programs
	Use STC counselors, Point People and Business Liaisons to link academic instructors with vocational teachers
	Hold district-wide conference
	District to participate in curriculum integration pilot project
	Creation of Industry Cluster groups to develop programs which integrate applied and vocational education
	Develop and expand Career Pathways with integrate academic curriculum relevant to specific occupations
	Develop interactive/on-line system providing data on employment information, facilitating the development of academic and vocational projects
	Form Career Path Advisory Teams
	Create/expand Academy/Pathway programs/Applied Academic Courses
	Provide teacher release time/create teacher teams for curriculum development
	Integrate SCANS skills into academic and technical curriculum
	Create/Expand link with Goals 2000
	Develop mentoring relationship between sites that currently integrate curriculum

APPENDIX D

ANALYSIS OF PERFORMANCE MATRIX

GOAL ONE: COMPREHENSIVE LOCAL SCHOOL-TO-CAREER SYSTEM	
	Identify work sites for teacher and student work based activities
	Create accountability system
Provision of career guidance and counseling services K-18 (with integrated school-based and work-based components).	Award schools funds through competitive process
	Coordination between counseling/guidance centers and STC centers at multiple levels
	Fund 1 FTE for K-8 Career Guidance/JA, and Point Person Coordinator
	Training for counselors/staff/teachers
	Learning plans/Career portfolios
	Orientation to STC for parents/students
	Orientation on One-Stop Career Center to STC guidance counselors
	Dissemination of STC Information
	Infusion of Career-related topics to curriculum through specific academic courses
	Implement career-related senior project
	Create accountability system
	Develop an interactive database allowing exchange of information
	Award schools funds through competitive process
	Create/improve career centers
	Conduct career awareness presentations field trips
	Sponsor STC conferences for practitioners
	Administer career interest survey
	Provide counseling services
	Provide services to out-of-school adults, non-traditional students, and drop-outs
	District to implement STC guidance and counseling process
Kindergarten through post-secondary linkages	Develop Career Awareness modules
	Create/expand articulation agreements/committees
	Establish connection with Teacher Education Programs to teach teachers about STC
	Have older students speak to younger students about education/training
	Staff attend Tech Prep and other conferences

APPENDIX D

ANALYSIS OF PERFORMANCE MATRIX

GOAL ONE: COMPREHENSIVE LOCAL SCHOOL-TO-CAREER SYSTEM	
	Identify and distribute to all stakeholders information regarding best practices on K-12 STC curriculum and articulation
	Recruit additional university and college partners to provide college level classes
	Staff development
Coordination and integration with existing education, workforce development, welfare reform, economic development initiatives, programs, and resources	STC Forum/Meetings/Presentations to share information
	Coordinator of efforts with other STC-related initiatives
	Classroom and ROP teachers will develop STC vocational component for 11-12 grades and adults
	Develop common presentation to be delivered to identified stakeholders
	Project coordinator to work with existing education, workforce development, welfare reform programs on availability of paid and non-paid job training opportunities
Support and participation of key stakeholders	Create School Site STC Advisory Council
	Improve guidance counseling delivery system
	Hold informational meetings for parents/business stakeholders
	Include parents in advisory committees
	Recruit CBOs to participate in ongoing committees/councils
	Implement marketing plan targeting key stakeholders
	Provide training for employers and educators on STC
	Conduct on-going surveys of employers to determine interest in/level of support for STC
Adult and alternative education integrated into STC partnership	Award schools funds through competitive process
	Teacher/staff training
	Disseminate STC information to all adult and alternative education leadership and faculty
	Develop strategies to integrate STC goals into instruction and county school and opportunity class programs

APPENDIX D

ANALYSIS OF PERFORMANCE MATRIX

GOAL ONE: COMPREHENSIVE LOCAL SCHOOL-TO-CAREER SYSTEM	
Career awareness, exploration and guidance, and cluster opportunities	Integrate career centers and guidance counseling services
	Ongoing career awareness activities/ Career Days held at each district
	Implement special programs for students related to personal accountability, responsibility (CHOICES)
	Develop "Certification of Work Readiness" (Exit interview by business member for graduates)
	Develop a matrix of identified resources linked to selected career paths
	Identify appropriate skills for each path, available resources and additional partners
	Develop Skills Certification in pathways, Academies, ROP courses
	Staff Development
	Training for worksite mentors
	Create new pathways
	Create accountability system
	Award schools funds through competitive process
	Review "best practices" related to course competencies, career counseling, etc.
Professional development of all relevant stakeholders	Training /workshop on academic standards in core curriculum/ integrated curriculum
	Faculty job shadowing, internships, faculty-employer exchange programs
	Teacher /administrator training on SCANS integration
	Teacher training in career-based assignments/projects
	Training of career pathway teams on integration of labor market information
	Use of authentic/alternative assessment (e.g., senior project)
	Training on use of Student Learning Plans/Career Portfolios
	Training of vocational faculty and other teachers on "All Aspects of the Industry"
	Collaborate with CSU System to provide continuing education credits
	Create Professional Development Committee, a needs assessment survey, and long-term plan to assist in the design and implementation of training
Safe and healthy student work environment	Gather, develop, and/or disseminate occupational safety materials
	Train workplace partners in requirements of hiring students
	Train schools about safe and healthy work environments for students
	Monitor off-campus work sites

APPENDIX D

ANALYSIS OF PERFORMANCE MATRIX

GOAL ONE: COMPREHENSIVE LOCAL SCHOOL-TO-CAREER SYSTEM	
	Update county-wide and district emergency response and safe schools plans to include work environment issues
Skill standards and student certification	Develop skill certificates for career pathways
	Develop employment competency programs
	Develop Certification of Work Readiness
	Use California State Career Performance Standards in career paths
	SCANS/STC-related teacher/staff training
	Establish Portfolio benchmarks that include skill certification and SCANS
	Evaluate and revise standards for ROP courses
Coordination and provision of services through One-Stop Career Centers	Create clearinghouse linking various STC services/service providers
	Coordinate services through One-Stop Centers
	Training for teachers/guidance counselors/others on how and when to use One-Stop Center
	Tour One-Stop center for teachers/others
	Develop Bishop based One-Stop Career Centers
	Publish information about One-Stop Centers in STC literature
STC outreach and Marketing	Create marketing plan/committee
	Develop tools/materials for communicating about STC (newspaper, radio, television, home page, video, etc.) and disseminate
	Participate in community forums/presentations
Curriculum development based on labor market information	Collect/provide (working with EDD) information about local industry and labor market data to schools/students/other stakeholders
	Provide students with career planning guide
	Create career pathways in growth industries
	Obtain input from employers related to emerging industrial trends
	Share labor market information with ROP teachers to integrate info with curriculum related to career paths
	Modify curriculum, as needed, based on labor information

APPENDIX D

ANALYSIS OF PERFORMANCE MATRIX

GOAL TWO : QUALITY, EFFECTIVENESS, AND SCOPE OF THE LOCAL PARTNERSHIP	
Commitment of required and recommended partners	Create mechanism for regular and ongoing meetings and communication of active partners
	Create programs involving community (e.g., Principal for a Day; Teacher Tribute Dinner)
	Target students and parents who participate in existing programs (e.g., Booster club, Journalism club)
	Recruit new partners (including colleges and universities)
	Involve partners in STC system governance
	Develop and administer survey to gather data on stakeholder issues
	Develop handbook to identify roles and responsibilities of all stakeholders
Local partnership reflects the community's population	Recruit members from different committees/councils that are representative of the community
	Require participation of business/CBO/other agencies in committee structure
	Conduct annual census/evaluation of the characteristics of the STC partnership
Participation of CBOs	Expand role of CBOS in connecting activities, advisory committees, and partnership leadership
	Conduct outreach activities with CBOs
Continuous improvement of the STC system	Collect performance measures related to post-secondary transitions
	Develop evaluation procedures and process
	Conduct training/professional development about the continuous improvement process
	Governance council to develop strategic plan for continuous improvement
	Create cooperative agreements between all STC stakeholders

APPENDIX D

ANALYSIS OF PERFORMANCE MATRIX

GOAL THREE: PARTICIPATION OF ALL STUDENTS	
Equal access for all students to all STC components	Provide teacher training on SCANS and integrating the curriculum
	Establish advertising campaign to encourage on-going education for all community members
	Create/expand job shadowing program
	Provide inservice training to all school staff about STC and inclusion
	Provide release time for cross-disciplinary teams to work on curriculum integration and other STC activities
	Create STC home page and other informational and recruitment materials
	Maintain database of student participation in STC activities
	Individualize program components to meet needs of all students
	Conduct evaluation to identify barriers to inclusion
	Develop working partnership to investigate expansion
	Address barriers to equal access/ to participation in non-traditional programs and careers
	Videoconferencing equipment to be installed to provide courses and career information access in isolated and distant areas
Specialized support and resources for all students, as needed	Establish a mentoring program
	Develop a STC resource booklet/newsletter for parents/students
	Establish a STC Phone Line for general STC information
	Transition Partnership Program for Special Education Students to help job placement
	Job placement and coaching services, including support for special education student and those with special needs
	Career Center open to public
	Adult classes
	Alternative schools for students who have been expelled or who need restricted environment
	Committee to promote hiring of individuals with disabilities
	Creation/expansion of parent education programs related to supporting students in school
	Staff development /strategies related to inclusion of all students (including ELL, GATE, etc.)
	State and federal categorical resources to be identified and evaluated for integration
	Allow sites that are more advanced to mentor other sites
	Create School-within-a-school programs
	Survey special and categorical staff to determine additional resources needed to involve all students

APPENDIX D

ANALYSIS OF PERFORMANCE MATRIX

GOAL THREE: PARTICIPATION OF ALL STUDENTS	
	Articulate STC with special and categorical programs
All student preparation and opportunities for high-skill, high-wage careers, expanded opportunities and further learning	Creation/expansion of programs for students to visit colleges/trade schools
	Create mechanism for higher education students to make presentations to younger students
	Develop pool of business speakers available to give presentations
	Develop/expand internship and mentoring program
	CISCO Academy to train/certify students in computer networking
	Create network linking rural/urban students/teachers
	Develop program to prepare students with basic entry skills toward higher-wage, higher-skill employment
	Develop "bridge" program to ease re-entry of out-of-school youth into the educational system
	Develop/expand trade and technical skill certificate programs
	Develop/expand Youth Employment Services Program
	Research "best practices" and barriers to implementation
	Encourage mentoring between sites
	Award schools funds through competitive process
	Create special support services/opportunities related to STC for special and categorical students
	Develop plan to retain students in system through expanding delivery of relevant career pathways
Oversight and communications within the organizational structure of the partnership	Clearly specify membership guidelines, roles and responsibilities of Executive Board and other committees
	Hold regularly-scheduled meeting of Executive Board/Decision-Making Body
	Establish recruitment process for various committee members
	Hire school site STC coordinators/personnel
	Create communication mechanisms for various committees
	Create Home Page
	Create marketing plan to promote the partnership
	Provide oversight/accountability structure

APPENDIX D

ANALYSIS OF PERFORMANCE MATRIX

GOAL THREE: PARTICIPATION OF ALL STUDENTS	
	Videoconferencing/interactive communication abilities
	Attend statewide meetings/ Publish directory
	Partners to attend training sessions
	Develop local plan for implementing STC within their district
Performance Indicators	Create indicators, select data collection strategies, hire evaluation team
	Integrate National Career Development Guidelines into curriculum and the delivery of counseling services
	Develop student portfolios/career plans
	Staff development/teacher shadowing
	Create career pathways
	Develop worksite learning opportunities
Sustainability and expansion of the STC system	Establish career center
	Establish mechanism for communication/marketing of STC
	Creation/integration of STC staff positions
	Create committee to develop long term strategies for sustaining STC system
	Staff development
	Develop and implement plan to integrate STC staff into existing positions
	Recruit new business partners
	Appoint Resource Development Committee to review resources needed to support planned activities and obtain additional funding and leverage other resources
Capacity building (effective use of appropriate technology to enhance school and work-based learning)	Link STC resources via Web Page/on-line database
	Link all schools in the partnership electronically
	Training on technology use for assessment, accessing STC-related information, distance learning
	Needs assessment for technology

APPENDIX D

ANALYSIS OF PERFORMANCE MATRIX

APPENDIX E

SUMMARY TABULATIONS FROM THE 1998 STW LOCAL PARTNERSHIP SURVEY

Available Upon Request

Major Issues for Future National Research

Although there has been considerable effort to investigate STW at the national level, a number of unanswered questions remain:

- Will early partial efforts lead to more comprehensive STW approaches?
- Do STW efforts support higher academic standards and achievement?
- What is the potential for sustained STW systems?

This section addresses these questions and identifies associated issues.

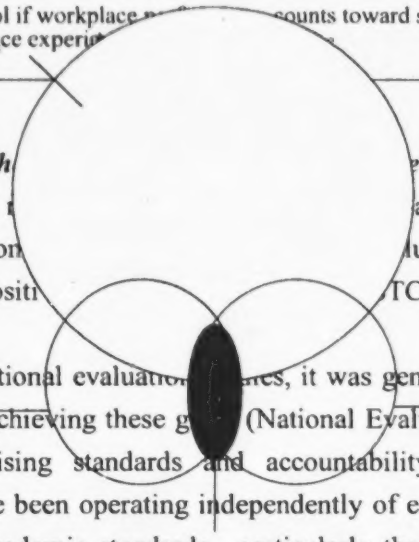
Will Early Partial Efforts Lead To More Comprehensive STW Approaches?

The three national studies of STW show considerable progress in only a few years toward implementing key elements of the STWOA. However, many schools are providing only some parts of the STW school-improvement strategy, and few students participate in a comprehensive career-focused high school learning experience. The National Evaluation indicates that schools have a long way to go to integrate comprehensive career development activities, career-related Academies, and paid or unpaid work experience that is linked to learning in the classroom. As shown in Figure 6, only about 3% of students have been involved in all three of these curriculum approaches. Future research must focus on how extensively schools go beyond these partial efforts to include all students in a multifaceted STW experience.

Figure 6. Student Involvement in Key STW Components in Member High

[National Evaluation, Figure III.14, p. 97]

* Work experience is linked to school if workplace [illegible] counts toward school grades and there are class assignments that draw on workplace experi[illegible]



Do STW Efforts Support High[illegible]evement?

Important goals of the STW [illegible]ademic standards and produce positive student outcomes. Son[illegible]luation of Boston's School-To-Career program, suggest positi[illegible]TC participation and increased academic performance.[23]

However, in the published national evaluation[illegible]ies, it was generally too early to identify the role that STW is playing in achieving these g[illegible] (National Evaluation, p. 139). In most states, implementing STW and raising standards and accountability are two important school improvement efforts that have been operating independently of each other. Some teachers have even indicated that raising academic standards—particularly through heavy new emphases on standardized testing—has slowed the progress of STW-type reforms. The time is right for additional research to explore the impact of STW on academic standards and a broad array of student outcomes.

What Is the Potential for Sustained STW Systems?

Future prospects for LPs vary widely. As STW begins to enter a transition phase in many states, practitioners will need to answer questions such as the following (Progress Measures, p. 35):

- To what extent do high levels of school and student participation enhance a partnership's prospects for sustaining STW activities?
- Is there a relationship between early success in identifying alternative funding mechanisms and subsequent growth and institutionalization of STW activities?
- Do partnerships with consistent, high-quality employer participation exhibit greater success in sustaining STW activities? What roles and responsibilities are employers assuming to promote continuation of STW activities?

[23] Measuring and Documenting Student Outcomes in School-To-Career *Presentation*, Alameda County Office of Education, March 2000.

- Does sustaining the STW concept and its benefits for students require sustaining a regional partnership infrastructure launched with STWOA funds? Or, can the results of STW-type reforms endure solely through the efforts of individual schools and districts?

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